Access DB# 153861

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DIAWN GARRETT Examiner #: 76107 Date: 5/17/2005
Art Unit: 1774 Phone Number ~~10~~ 2-1523 Serial Number: 10/807,984
Mail Box and Bldg/Room Location: Remsen 10C79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Aminostyrylnaphthalene compound

Inventors (please provide full names): MARI ICHIMURA, TADASHI ISHIBASHI, SHINICHIRO TAMURA

Earliest Priority Filing Date: 3/24/03

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search

Formula A shown in claim 1.

****

STAFF USE ONLY

Searcher: WLL
Searcher Phone #:
Searcher Location:
Date Searcher Picked Up: 5/25/05
Date Completed: 5/26/05
Searcher Prep & Review Time: 90
Clerical Prep Time: 30
Online Time:

Type of Search

NA Sequence (#)
AA Sequence (#)
Structure (#) 1
Bibliographic
Litigation
Fulltext
Patent Family
Other

Vendors and cost where applicable

STN # 31969
Dialog
Questel/Orbit
Dr.Link
Lexis/Nexis
Sequence Systems
WWW/Internet
Other (specify)

PTO-1590 (8-01)

STIC Search Report
EIC 1700

STIC Database Tracking Number: 153361

TO:	From:
Dawn Garrett Location: REM 10C79 Art Unit : 1774 May 26, 2005 Case Serial Number: ~~10/807784~~ 10/807,984	Usha Shrestha Location: EIC 1700 REMSEN 4B28 Phone: 571/272-3519 usha.shrestha@uspto.gov

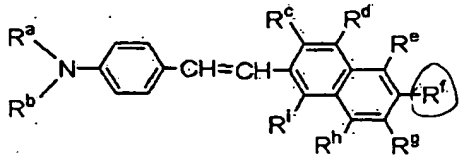
Search Notes

10/807,984

WHAT IS CLAIMED IS:

1. An organic electroluminescent device comprising an anode, a cathode, and an organic layer arranged between said anode and said cathode, wherein at least a part of said organic layer comprises at least one aminostyrylnaphthalene compound represented by the following formula [A]:

Formula [A]



wherein:

R^a and R^b may be the same or different and each independently represents a substituted or unsubstituted aryl group,

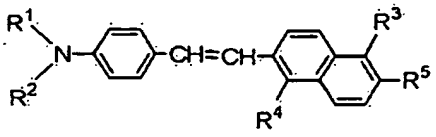
R^c, R^d, R^e, R^g, R^h and R^i may be the same or different, at least one of R^c, R^d, R^e, R^g, R^h and R^i independently represents a hydrogen atom, a cyano group, a nitro group, a trifluoromethyl group or a halogen atom, and the remaining one or ones of R^c, R^d, R^e, R^g, R^h and R^i, if any, are each a hydrogen atom, a cyano group, a nitro group, a trifluoromethyl group or a halogen atom, and

R^f represents a substituted or unsubstituted, saturated or unsaturated alkyl group, a substituted or

unsubstituted alicyclic hydrocarbon group, a substituted or unsubstituted aryl group, a substituted or unsubstituted alkoxyl group, a substituted or unsubstituted alicyclic hydrocarbyloxy group or a substituted or unsubstituted aromatic hydrocarbyloxy group.

2. The organic electroluminescent device according to claim 1, wherein at least said part of said organic layer comprises at least one aminostyrylnaphthalene compound represented by the following formula [I], [II] or [III]:

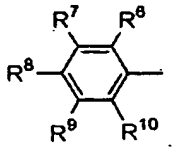
Formula [I]



wherein:

R^1 and R^2 may be the same or different and each independently represents a phenyl group represented by the following formula (1):

Formula (1)



wherein R^6, R^7, R^8, R^9 and R^{10} may be the same or

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=> fil reg
FILE 'REGISTRY' ENTERED AT 10:29:26 ON 26 MAY 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 American Chemical Society (ACS)

=> d his

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L4             7 S L3
L5           107 S L3 FUL
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L7             1 S US20040265627/PN
L8             1 S L7 AND L6
L9            22 S L6 AND (?LUMINES? OR ?EMIT? OR LUMINES? OR OLED? OR L(?LUMINES?
OR ?EMIT? OR
                 LUMINES? OR OLED? OR LED OR LIGHT?)
L10           18 S L6 NOT L9
L11           17 S L6 AND DEV/RL
L12           16 S L6 AND OPTIC?/SC,SX
L13           22 S L9 OR L12

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=> d que l6
L3               STR
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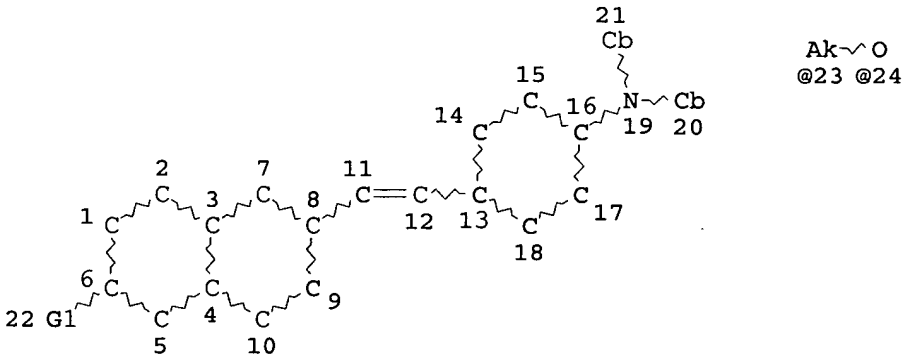


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DEFAULT MLEVEL IS ATOM
GGCAT   IS SAT  AT  27
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE
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L6 40 SEA FILE=HCAPLUS ABB=ON PLU=ON L5

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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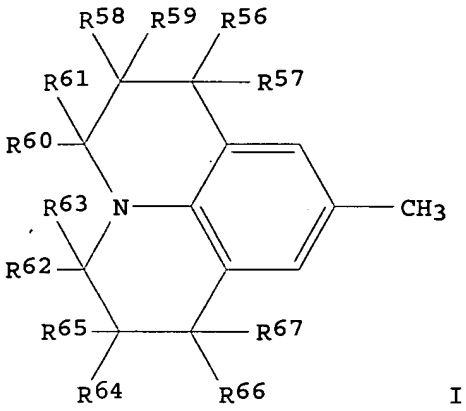
L13 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:302673 HCAPLUS
DOCUMENT NUMBER: 142:382308
TITLE: White-**emitting** organic **electroluminescent** devices and displays showing little chromaticity change
INVENTOR(S): Asaki, Akio; Kashiwabara, Mitsuhiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005093348	A2	20050407	JP 2003-328242	2003 0919

PRIORITY APPLN. INFO.: JP 2003-328242 2003 0919

GI



I

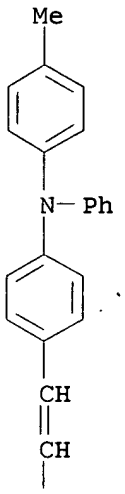
AB The devices and displays have organic orange-**emitting** and blue-**emitting** layers, where the orange-**emitting** layers contain hosts comprising ≥1 organic compds. and guests YCH:CHX [I; X = (substituted) Ph, (substituted) 1- or 2-naphthyl, (substituted) 1-, 2-, 3-, or 9-phenanthrenyl; Y = (N-alkyl or N-aryl)aminophenyl, (substituted) azahexahydrophenalenyl, (substituted) Ph; R58-R72 = H, alkyl, aryl, etc.]. Preferably, the hosts comprise red-, green-, and/or blue-**emitting** hosts, hole transporting substances, and mixts. of the hosts and hole transporting substances. Thus, a white-**emitting** organic **electroluminescent** device had an orange-**emitting** layer containing 9,10-di(2-naphthyl)anthracene as a blue-**emitting** host and I [X = 9,10-dicyano-6-methyl-3-phenanthrenyl, Y = [4-(4-methylphenyl)phenylamino]phenyl] as a guest.

IT **445256-74-6**
(blue-**emitting** host for orange-**emitting** layer; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)

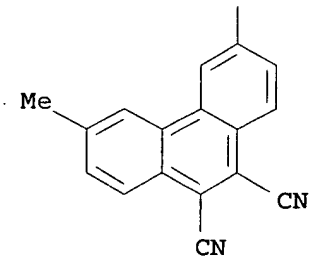
RN 445256-74-6 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



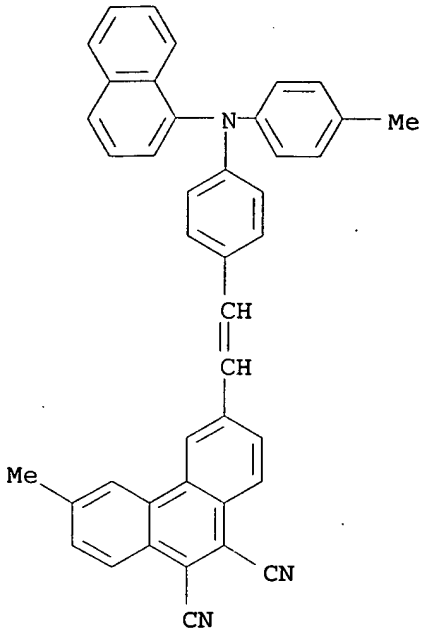
PAGE 2-A



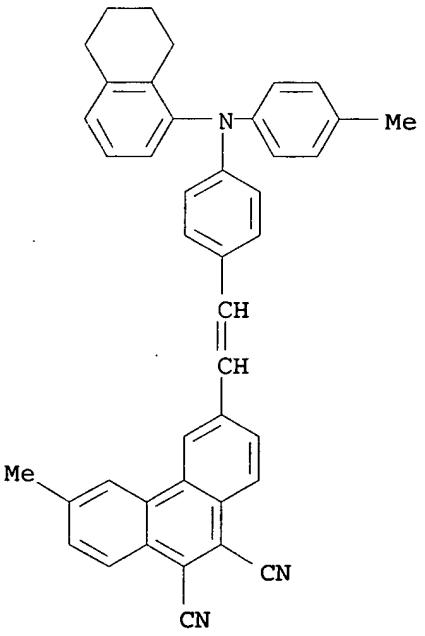
IT **445256-78-0 445256-81-5 445256-83-7**
637033-83-1 637033-86-4 637033-89-7
(guest for orange-**emitting** layer; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)

RN 445256-78-0 HCAPLUS

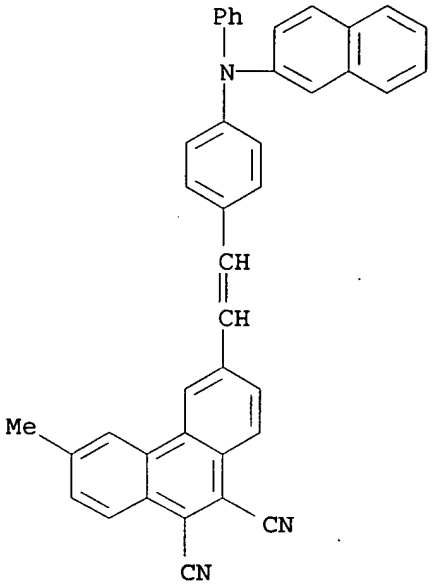
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 445256-81-5 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

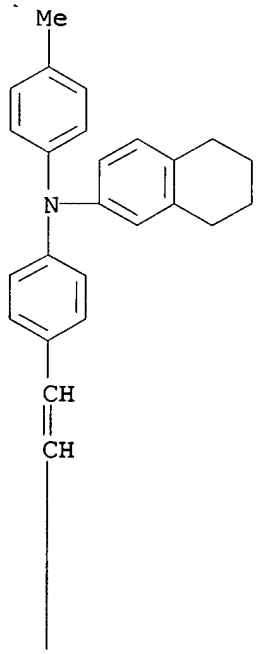


RN 445256-83-7 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 637033-83-1 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-2-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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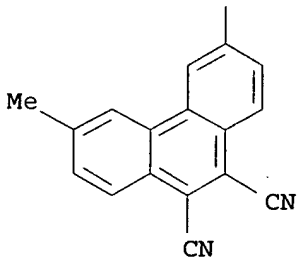
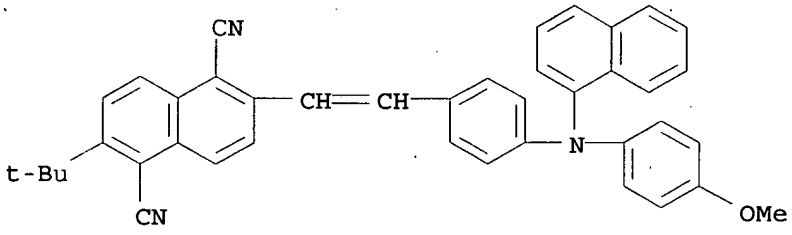
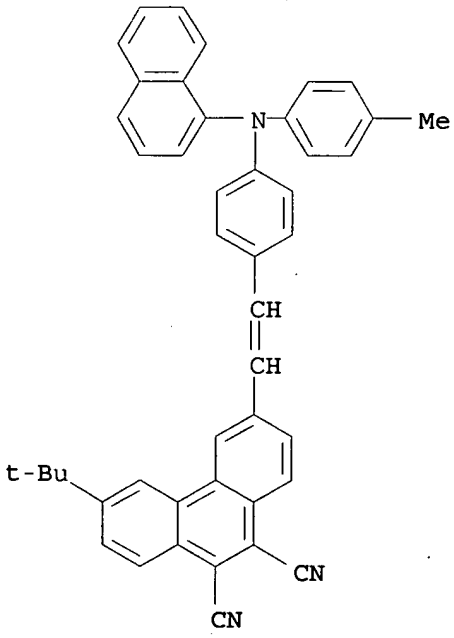


RN 637033-86-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2-(1,1-dimethylethyl)-6-[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 637033-89-7 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-(1,1-dimethylethyl)-6-[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): **73**
ST white org **electroluminescent** device styryl guest; styryl guest white org **electroluminescent** display; orange styryl guest org **electroluminescent** device; blue naphthylanthracene host org **electroluminescent** device; phenylaminophenyl phenanthryl ethene guest org **electroluminescent** device
IT **Electroluminescent** devices
(displays; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)
IT **Luminescent** screens
Luminescent substances
(**electroluminescent**; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)
IT **Electroluminescent** devices
(white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)
IT **445256-74-6**
(blue-**emitting** host for orange-**emitting** layer; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)
IT **445256-78-0 445256-81-5 445256-83-7**
637033-50-2 637033-54-6 637033-58-0 637033-70-6
637033-73-9 637033-78-4 **637033-83-1**
637033-86-4 637033-89-7 637033-90-0
(guest for orange-**emitting** layer; white-**emitting** organic **electroluminescent** devices and displays having orange-**emitting** and blue-**emitting** layers)

L13 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:260371 HCAPLUS
DOCUMENT NUMBER: 142:344862
TITLE: Organic EL device and display
INVENTOR(S): Kashiwabara, Mitsuhiro
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005027586	A1	20050324	WO 2004-JP12327	2004 0820

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,

MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT,
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT,
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2005100921	A2	20050414	JP 2004-19247	2004 0128
PRIORITY APPLN. INFO.:			JP 2003-298269	A 2003 0822
			JP 2004-19247	A 2004 0128

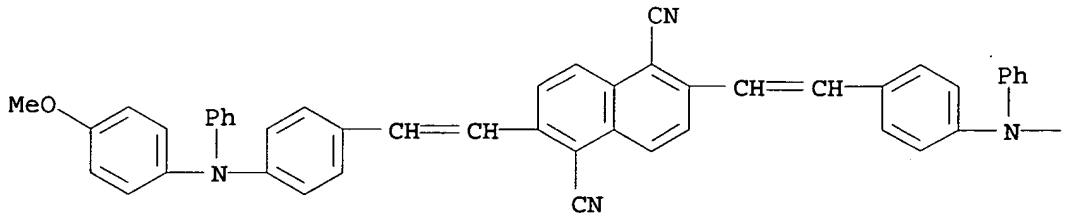
AB A red **light-emitting** layer, a green **light-emitting** layer and a blue **light-emitting** layer are arranged in this order between an anode and a cathode, and an intermediate layer composed of an organic material is disposed between the green **light-emitting** layer and the blue **light-emitting** layer. The HOMO-LUMO energy gap of the intermediate layer is larger than the HOMO-LUMO energy gap of a green **light-emitting** material constituting the green **light-emitting** layer. The intermediate layer has hole transport properties. A display using this organic EL device is provided with a color filter on the **light** taking-out surface side. By having such a structure, the organic EL device is capable to produce well-balanced, high luminance three color components, namely red, green and blue emission, which are suitable for a full color display.

IT **333339-14-3**
(organic **electroluminescent** device and display)

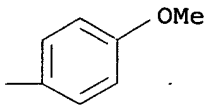
RN 333339-14-3 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-22
ICS H05B033-14; H05B033-12
CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 74
ST org **electroluminescent** device display
IT Glass substrates
Optical imaging devices
(organic **electroluminescent** device and display)
IT **Electroluminescent** devices
(organic; organic **electroluminescent** device and display)
IT 144810-07-1
(organic **electroluminescent** device and display)
IT 2085-33-8, Alq3 7439-95-4, Magnesium, properties 7440-22-4, Silver, properties 38215-36-0, Coumarin 6 50926-11-9, ITO 123847-85-8, α-NPD 124729-98-2 142289-08-5, DPVBi **333339-14-3**
(organic **electroluminescent** device and display)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:235266 HCAPLUS
DOCUMENT NUMBER: 142:306146
TITLE: **Electroluminescent** materials containing styryl compounds and diketopyrrolopyrroles, and red-**emitting** organic **electroluminescent** devices using them
INVENTOR(S): Suda, Yasumasa; Toba, Yasumasa; Tanaka, Hiroaki; Amano, Saneomi
PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 65 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005068376	A2	20050317	JP 2003-303555	2003 0827
PRIORITY APPLN. INFO.:			JP 2003-303555	2003 0827

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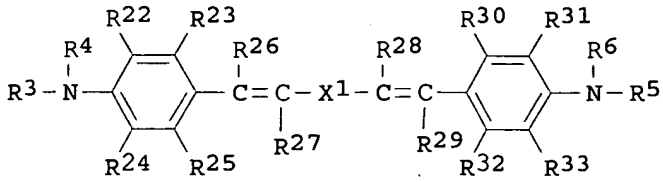

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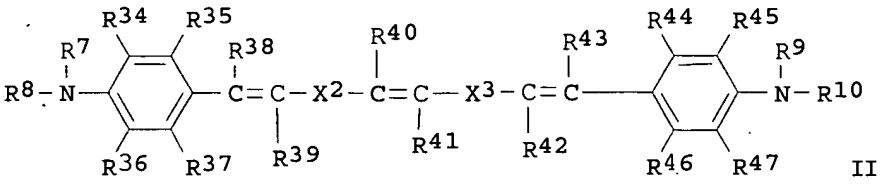

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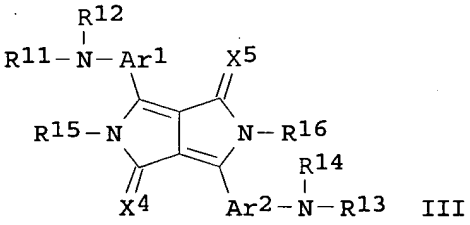


III

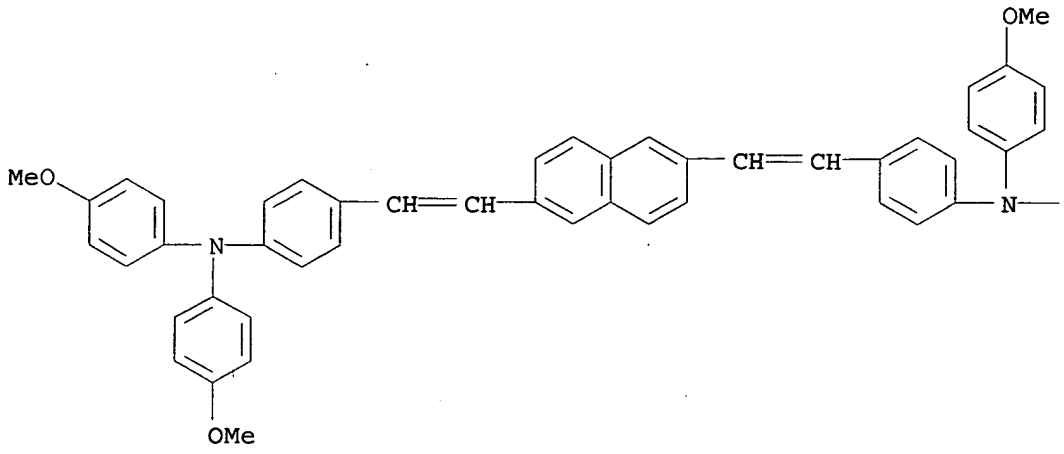
AB The materials contain styryl compds. I or II (R3-R10 = aliphatic hydrocarbyl, aromatic hydrocarbyl, aliphatic heterocyclyl, aromatic heterocyclyl; X1-X3 = aromatic heterocyclylene; R3R22, R4R24, R5R31, R6R33, R7R34, R8R36, R9R45, and R10R47 may form ring), and diketopyrrolopyrroles III [R11-R16 = H, aliphatic hydrocarbyl, aromatic hydrocarbyl, aliphatic heterocyclyl, aromatic heterocyclyl; X4, X5 = O, (un)substituted imino, (un)substituted CH2]. Thus, an organic **electroluminescent** device having an **emitter** layer containing I (R3 = R4 = R5 = R6 = OMe, X1 = 2,5-dicyano-1,4-phenylene, other = H) and III (R11 = R12 = R13 = R14 = 4-MeOC6H4, R15 = R16 = H, Ar1 = Ar2 = 1,4-phenylene, X4 = X5 = O) showed high **luminescence** intensity and color purity at low operation voltage, and lengthened service life.

IT **333339-47-2 847947-19-7 847947-21-1 847947-23-3**
(**electroluminescent** materials containing styryl compds. and diketopyrrolopyrroles for red-**emitting** organic **electroluminescent** devices)

RN 333339-47-2 HCAPLUS

CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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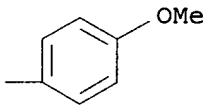
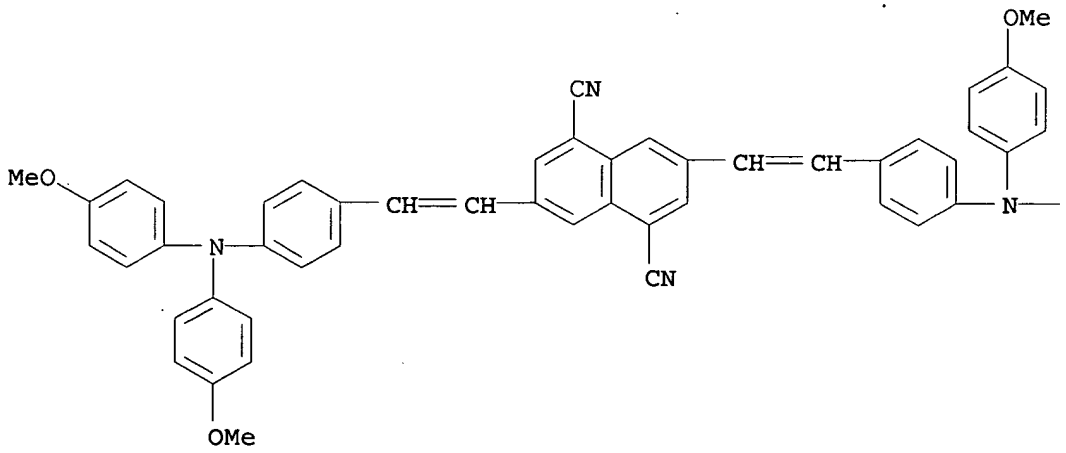
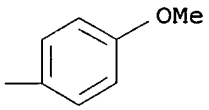


RN 847947-19-7 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 3,7-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

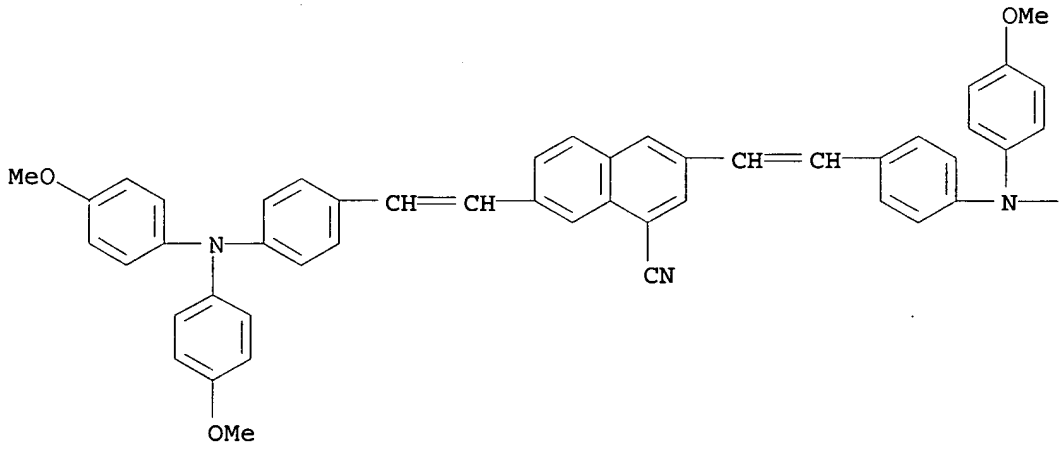


PAGE 1-B

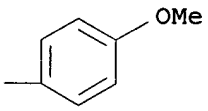


RN 847947-21-1 HCAPLUS
CN 1-Naphthalenecarbonitrile, 3,7-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

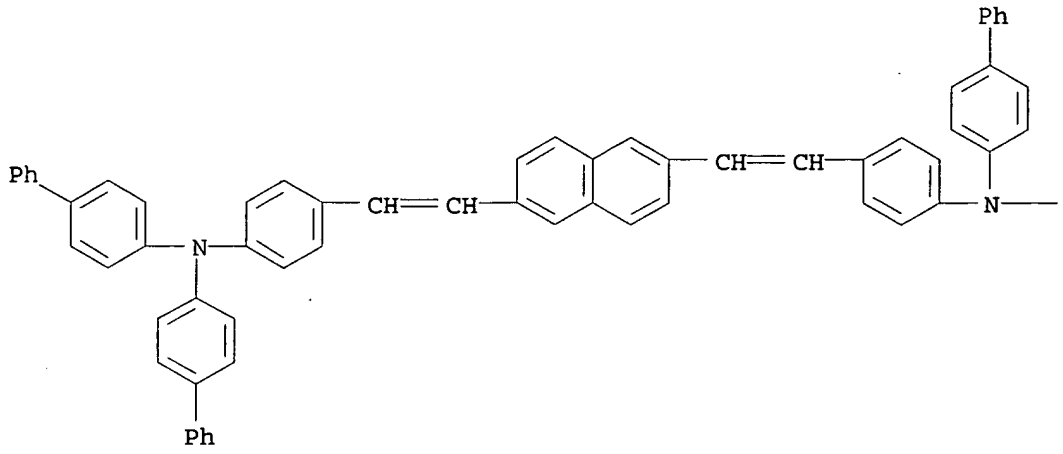


PAGE 1-B

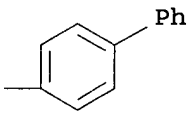


RN 847947-23-3 HCAPLUS
CN [1,1'-Biphenyl]-4-amine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[N-[1,1'-biphenyl]-4-yl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C09K011-06
ICS H05B033-14

CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)

ST diketopyrrolopyrrole styryl compd red **emitting** org **electroluminescent** device

IT **Luminescent** substances
(**electroluminescent**; **electroluminescent** materials containing styryl compds. and diketopyrrolopyrroles for red-**emitting** organic **electroluminescent** devices)

IT **Electroluminescent** devices
(red-**emitting**; **electroluminescent** materials containing styryl compds. and diketopyrrolopyrroles for red-**emitting** organic **electroluminescent** devices)

IT 488134-89-0 536761-83-8 847947-24-4
(dopant; **electroluminescent** materials containing styryl compds. and diketopyrrolopyrroles for red-**emitting** organic **electroluminescent** devices)

IT 251101-60-7 260255-67-2 260255-69-4 322475-23-0
333339-47-2 333426-81-6 333426-92-9 333427-20-6
847947-19-7 847947-21-1 847947-23-3
(**electroluminescent** materials containing styryl compds. and diketopyrrolopyrroles for red-**emitting** organic **electroluminescent** devices)

L13 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:116443 HCAPLUS
DOCUMENT NUMBER: 142:207353
TITLE: Bis(aminostyryl)phenanthrenes, their synthetic intermediates, and their production methods
INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 102 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

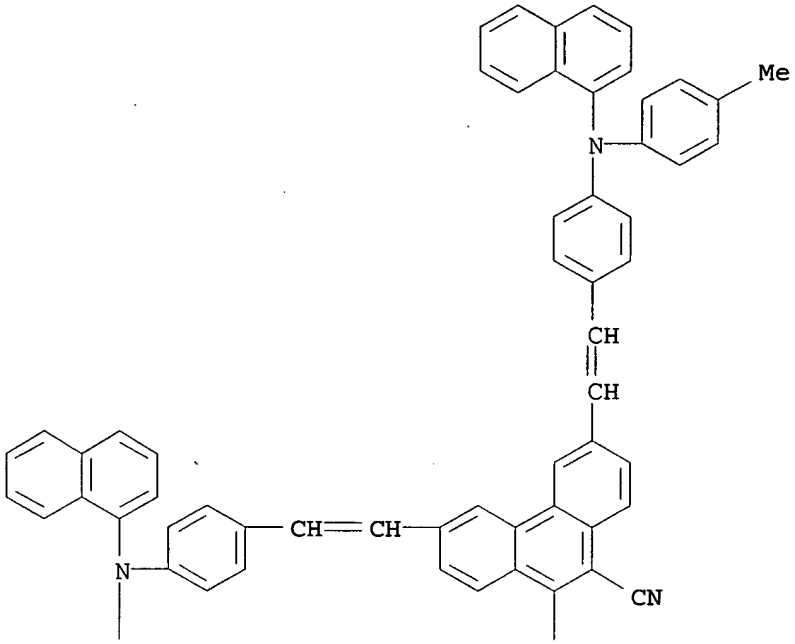
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005035927	A2	20050210	JP 2003-274282	2003 0714

PRIORITY APPLN. INFO.: JP 2003-274282 2003 0714

AB The invention relates to a red-**emitting** bis(aminostyryl)phenanthrene derivs., and their production method. The compound is suited for use in an **electroluminescent** display.

IT **816431-87-5P**
(bis(aminostyryl)phenanthrenes for **electroluminescent** display)
RN 816431-87-5 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

IC ICM C07C255-58
ICS C07C211-57; C07C211-61; C07C253-30; C07F009-38; C07F009-54; H05B033-14; C09K011-06

CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25

ST bisaminostyryl phenanthrene red **emitting** intermediate prodn

IT **Electroluminescent** devices
(bis(aminostyryl)phenanthrenes for **electroluminescent** display)

IT **Electroluminescent** devices
(displays; bis(aminostyryl)phenanthrenes for **electroluminescent** display)

IT **Luminescent** screens
Luminescent substances
(**electroluminescent**; bis(aminostyryl)phenanthrenes for **electroluminescent** display)

IT 122-52-1, Triethyl phosphite 128-08-5, N-Bromosuccinimide

445256-88-2 445256-91-7
(bis(aminostyryl)phenanthrenes for **electroluminescent** display)
IT 839728-89-1P 839728-92-6P
(bis(aminostyryl)phenanthrenes for **electroluminescent** display)
IT **816431-87-5P**
(bis(aminostyryl)phenanthrenes for **electroluminescent** display)

L13 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:13884 HCAPLUS
DOCUMENT NUMBER: 142:102853
TITLE: Red-**emitting** organic **electroluminescence** devices using bis(aminostyryl)phenanthrenes
INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 86 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005005226	A2	20050106	JP 2003-170219	2003 0616

PRIORITY APPLN. INFO.: JP 2003-170219 2003 0616

OTHER SOURCE(S): MARPAT 142:102853
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The devices include organic layers containing bis(aminostyryl)phenanthrenes I [R1-R4 = Ph II, 1-naphthyl III, 2-naphthyl IV other than specific combinations of II, III, and IV, e.g., R2 = R3 = R4 = III or IV when R1 = I (definition given); ≥1 of R7-R11, ≥1 of R18-R24 = H, C≥1 (un)saturated hydrocarbyl, C≥1 (un)saturated hydrocarbyloxy, C≥1 (un)saturated hydrocarbylamino, CF3, CN, halo; R5 and/or R6 = H, CN, NO2, CF3, halo]. The I form stable amorphous electron transporting, hole transporting, or **emitter** layers.
IT **816431-87-5 816431-92-2D**, alkyl or aryl derivs. **816431-97-7D**, alkyl or aryl derivs. **816432-01-6D**, alkyl or aryl derivs. **816432-04-9D**, alkyl or aryl derivs. **816432-08-3D**, alkyl or aryl derivs. **816432-09-4D**, alkyl or aryl ethers **816432-11-8D**, alkyl or aryl derivs. **816432-14-1D**, alkyl or aryl

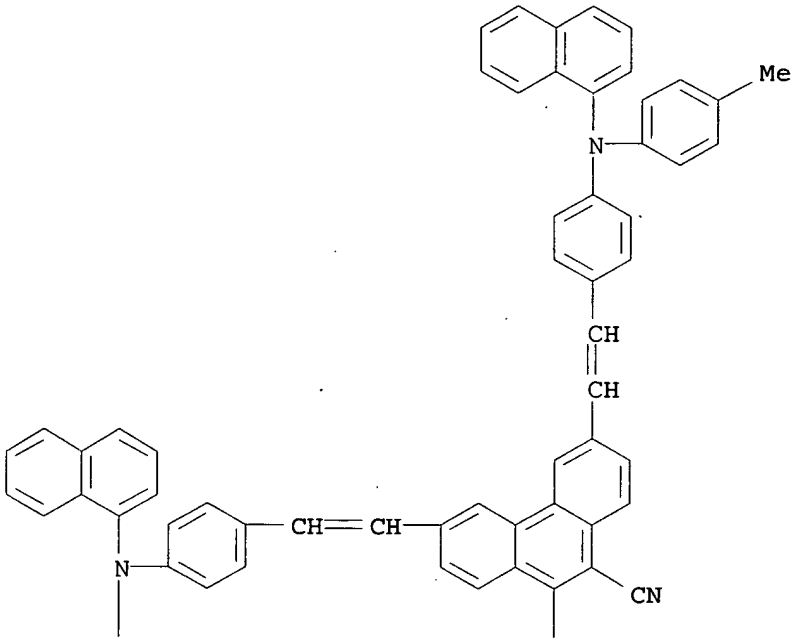
derivs. **816432-17-4D**, alkyl or aryl derivs. **816432-19-6D**, alkyl or aryl derivs. **816432-22-1D**, alkyl or aryl derivs. **816432-24-3D**, alkyl or aryl derivs. **816432-25-4D**, alkyl or aryl derivs. **816432-27-6D**, alkyl or aryl ethers **816432-29-8D**, alkyl or aryl derivs. **816432-31-2D**, alkyl or aryl derivs.

(red-**emitting** organic **electroluminescence** devices using bis(aminostyryl)phenanthrenes)

RN 816431-87-5 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

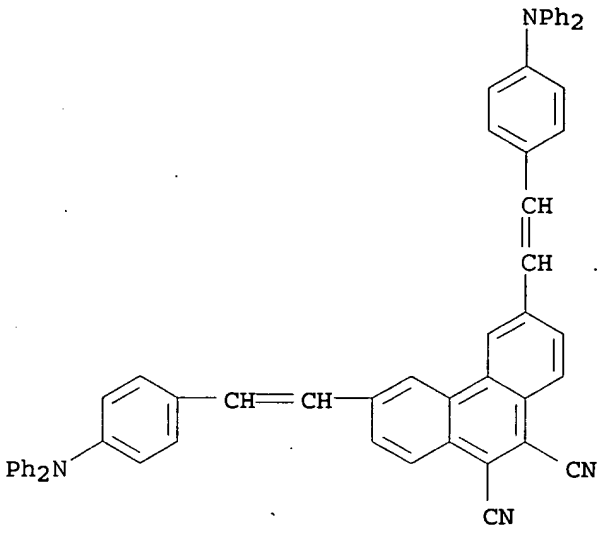
PAGE 1-A



PAGE 2-A

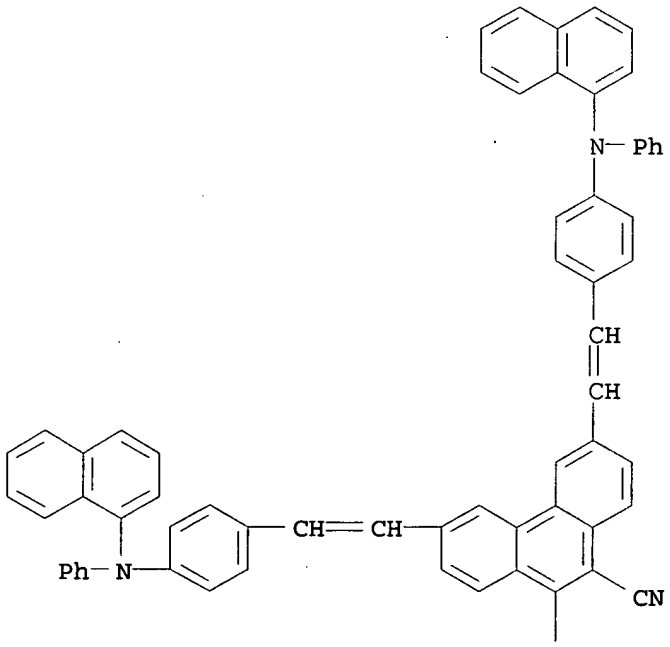
RN 816431-92-2 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 816431-97-7 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

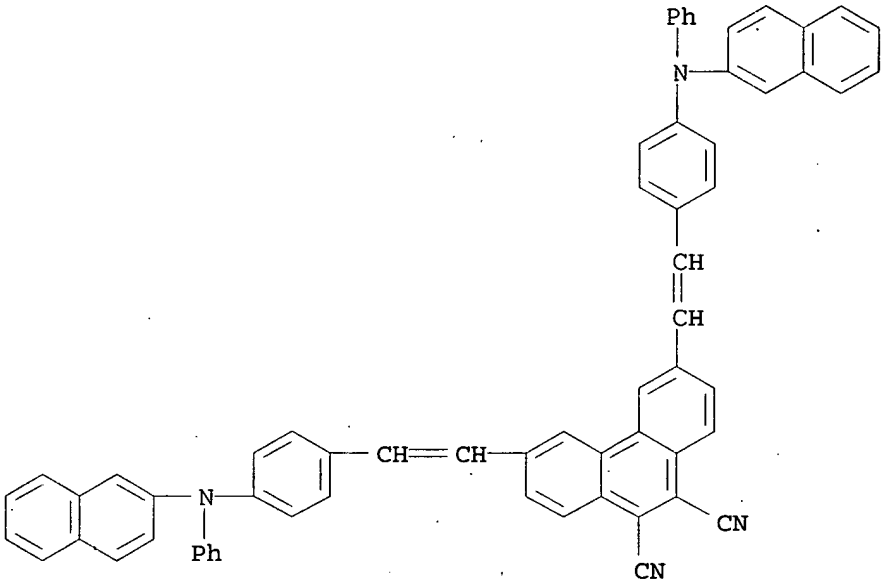
PAGE 1-A



PAGE 2-A

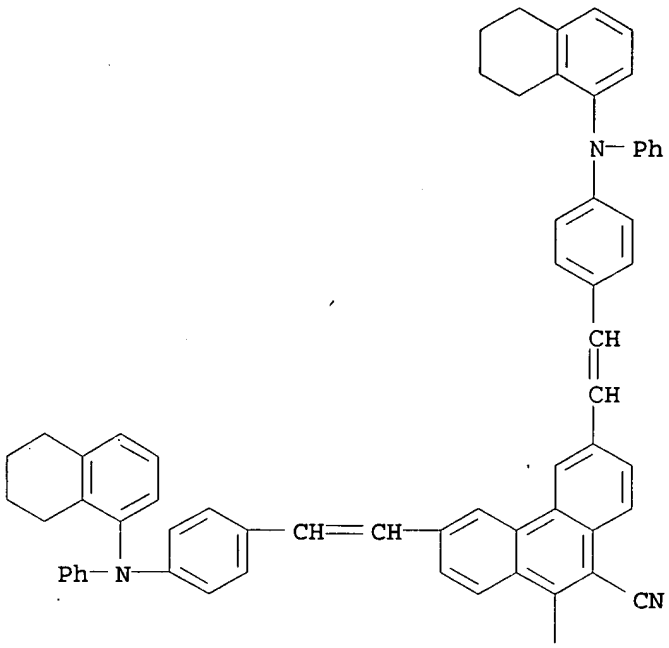
CN

RN 816432-01-6 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



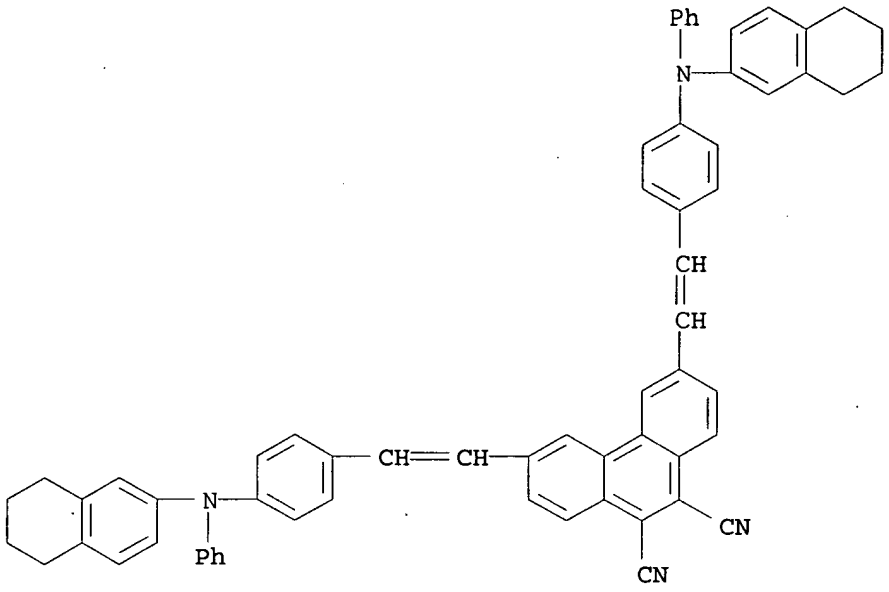
RN 816432-04-9 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



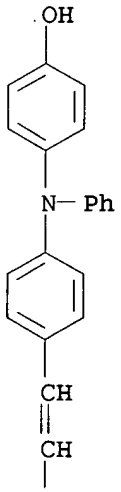
PAGE 2-A

RN 816432-08-3 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-2-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

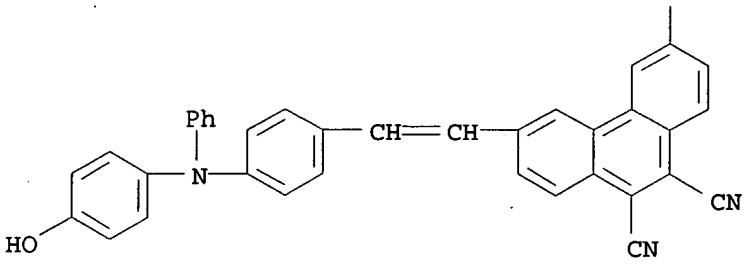


RN 816432-09-4 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-[(4-hydroxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

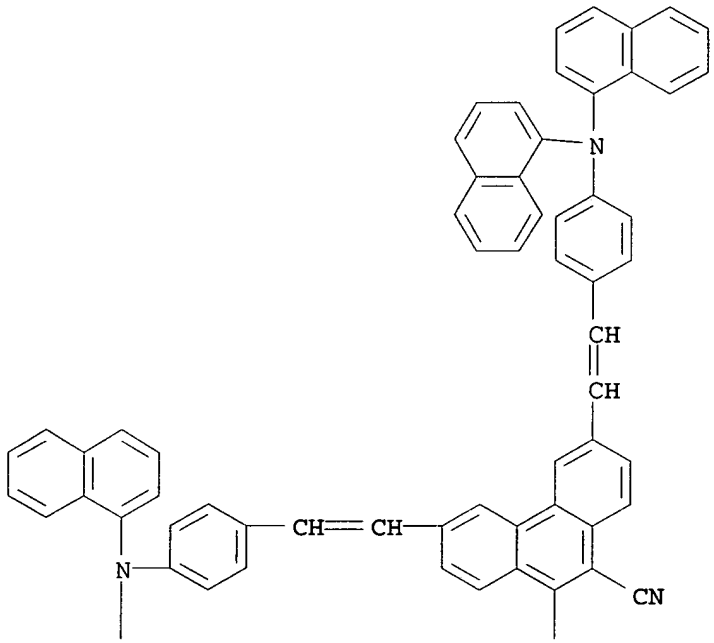


PAGE 2-A



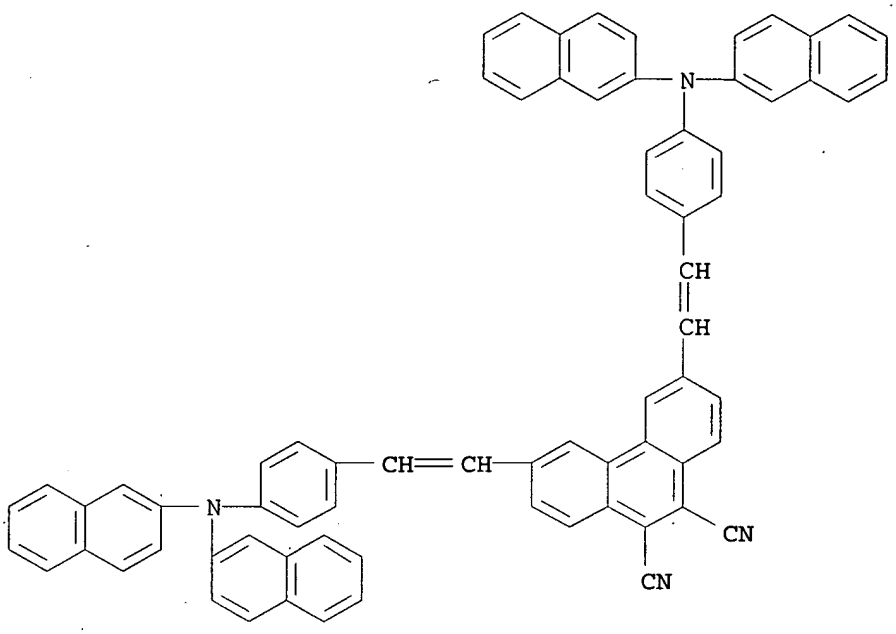
RN 816432-11-8 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

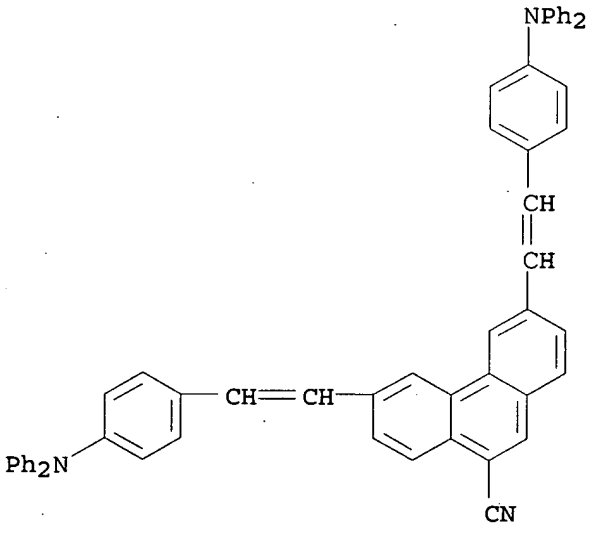


PAGE 2-A

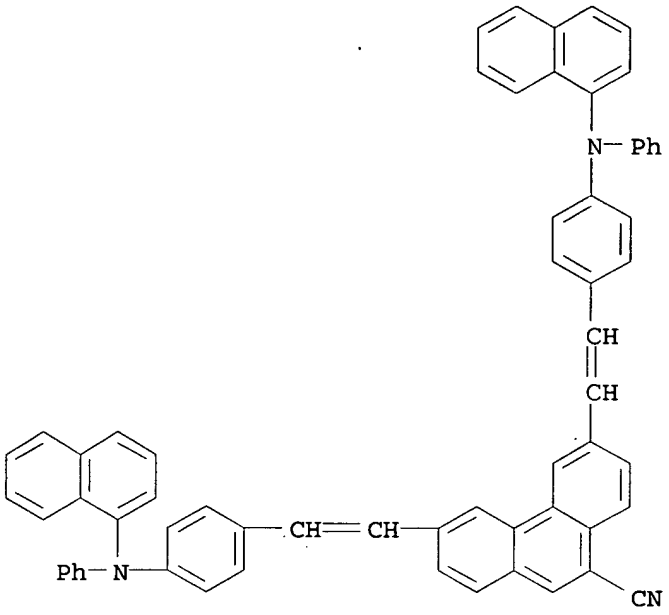
RN 816432-14-1 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3,6-bis[2-[4-(di-2-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



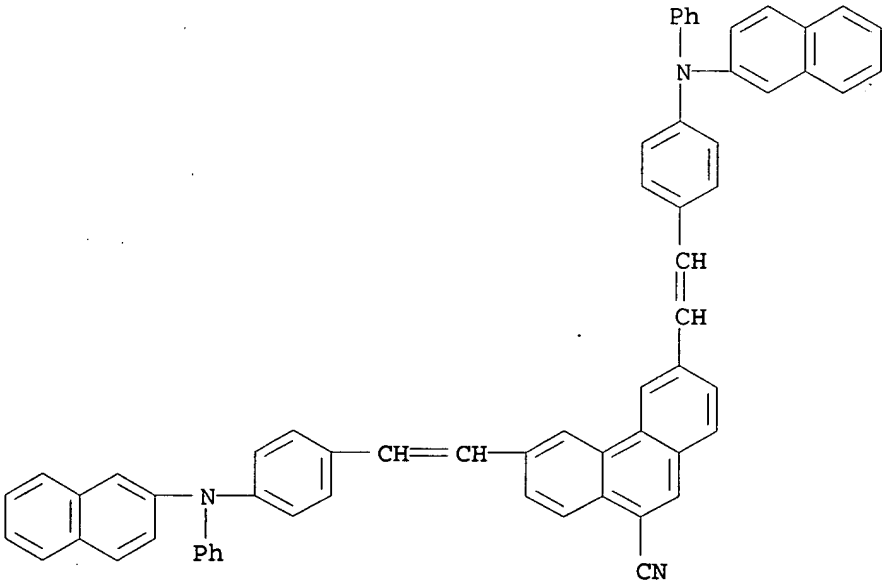
RN 816432-17-4 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



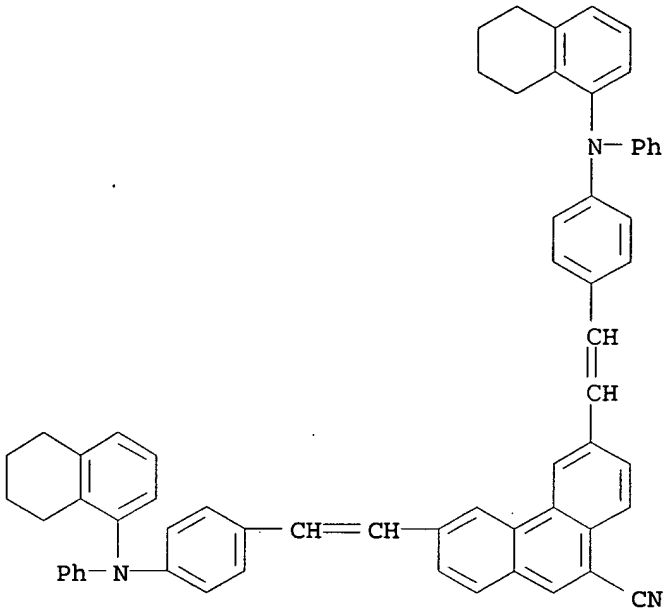
RN 816432-19-6 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



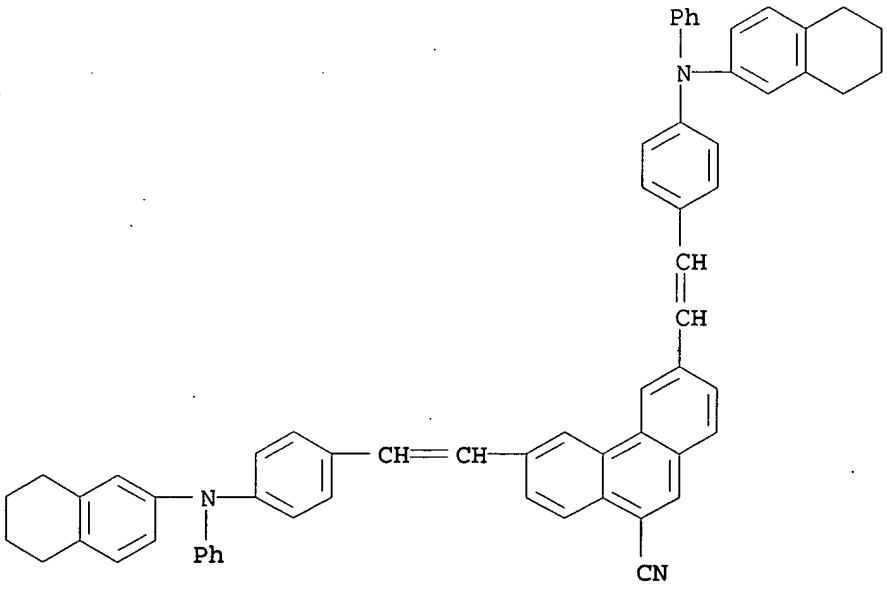
RN 816432-22-1 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 816432-24-3 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

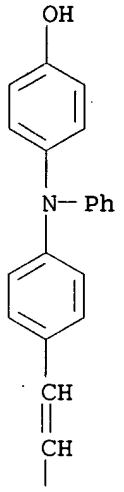


RN 816432-25-4 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-2-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

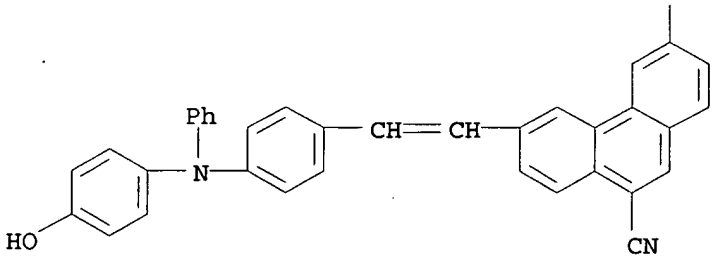


RN 816432-27-6 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-[(4-hydroxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

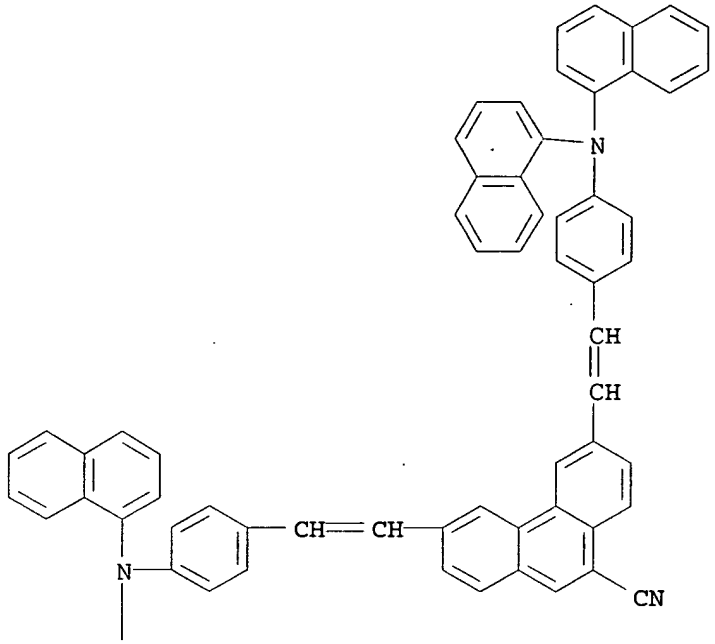


PAGE 2-A

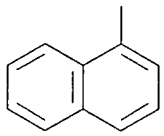


RN 816432-29-8 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

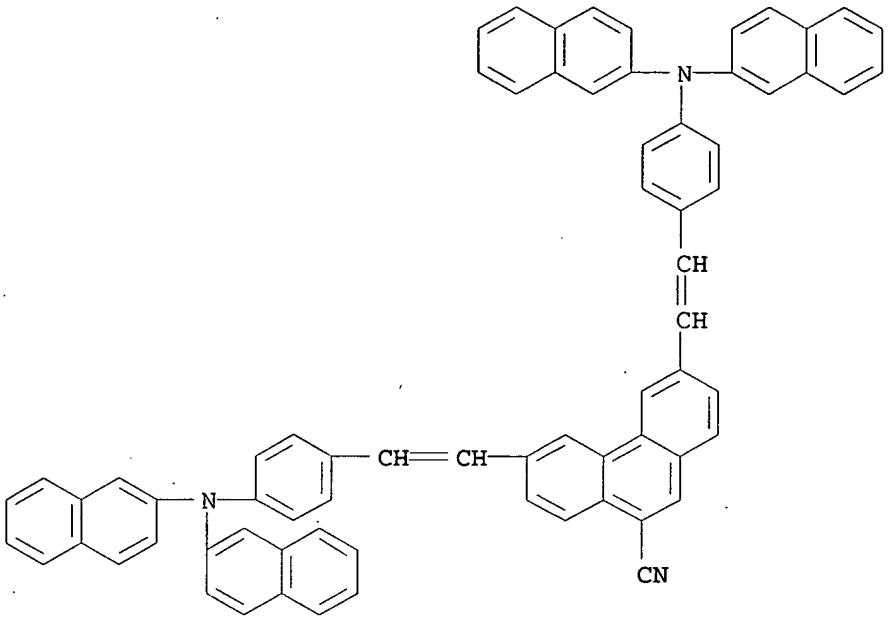
PAGE 1-A



PAGE 2-A



RN 816432-31-2 HCAPLUS
CN 9-Phenanthrenecarbonitrile, 3,6-bis[2-[4-(di-2-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-22
ICS C09K011-06; H05B033-14

CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)

ST red **emitting** org **electroluminescent** device bisaminostyrylphenanthrene

IT **Luminescent** substances
(**electroluminescent**; red-**emitting** organic **electroluminescence** devices using bis(aminostyryl)phenanthrenes)

IT **Electroluminescent** devices
(red-**emitting**; red-**emitting** organic **electroluminescence** devices using bis(aminostyryl)phenanthrenes)

IT **816431-87-5** **816431-92-2D**, alkyl or aryl derivs. **816431-97-7D**, alkyl or aryl derivs. **816432-01-6D**, alkyl or aryl derivs. **816432-04-9D**, alkyl or aryl derivs. **816432-08-3D**, alkyl or aryl derivs. **816432-09-4D**, alkyl or aryl ethers **816432-11-8D**, alkyl or aryl derivs. **816432-14-1D**, alkyl or aryl derivs. **816432-17-4D**, alkyl or aryl derivs. **816432-19-6D**, alkyl or aryl derivs. **816432-22-1D**, alkyl or aryl derivs. **816432-24-3D**, alkyl or aryl derivs. **816432-25-4D**, alkyl or aryl derivs. **816432-27-6D**, alkyl or aryl ethers **816432-29-8D**, alkyl or aryl derivs. **816432-31-2D**, alkyl or aryl derivs. 816432-33-4D, alkyl or aryl derivs. 816432-35-6D, alkyl or aryl derivs. 816432-37-8D, alkyl or aryl derivs. 816432-39-0D, alkyl or aryl derivs. 816432-41-4D, alkyl or aryl derivs. 816432-43-6D, alkyl or aryl ethers 816432-45-8D, alkyl or aryl derivs. 816432-47-0D, alkyl or aryl derivs.
(red-**emitting** organic **electroluminescence** devices using bis(aminostyryl)phenanthrenes)

L13 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN

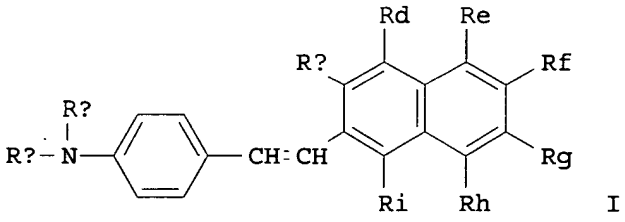
ACCESSION NUMBER: 2004:930972 HCAPLUS
DOCUMENT NUMBER: 141:403236
TITLE: Organic **electroluminescent** devices, aminostyrylnaphthalene compounds and synthesis intermediates thereof, and production processes of the same
INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: Eur. Pat. Appl., 76 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1473349	A2	20041103	EP 2004-7087	2004 0324
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK				
JP 2004307472	A2	20041104	JP 2004-33056	2004 0210
US 2004265627	A1	20041230	US 2004-807984	2004 0324

3 application

PRIORITY APPLN. INFO.:			JP 2003-79768 A	2003 0324
			JP 2004-33056 A	2004 0210

OTHER SOURCE(S): MARPAT 141:403236
GI



I

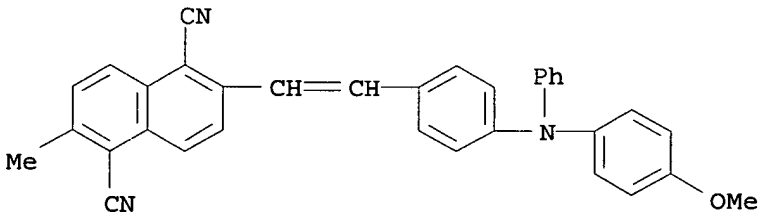
AB Aminostyrylnaphthalene compds. are described by the general formula I (Ra and Rb = independently selected (un)substituted aryl groups; Rc, Rd, Re, Rg, Rh, and Ri are independently selected from H, CN, a nitro group, a trifluoromethyl group or a halogen atom; and Rf = (un)substituted (un)saturated alkyl, (un)substituted alicyclic hydrocarbon, (un)substituted aryl group, (un)substituted

alkoxyl, a(un)substituted alicyclic hydrocarbyloxy, or (un)substituted aromatic hydrocarbyloxy). Organic **electroluminescent** devices with layers incorporating the compds. are also described. Methods for the production of the aminostyrylnaphthalene derivs. are described which entail condensation of a 4-aminobenzaldehyde deriv.and ≥1 phosphonate ester or phosphonium. Phosphonate esters or phosphoniums useful for the reactions are also described, as are methods for their production which entail reacting a halogenated aryl compound with a trialkyl phosphite. Further, halogenated aryl compds. appropriate as precursors for the synthesis of the phosphonate esters or phosphoniums are described along with a method for their synthesis by reacting a naphthalene derivative with an N-halogenated succinimide.

IT **786704-40-3P**
(organic **electroluminescent** devices and aminostyrylnaphthalene compds. and synthesis intermediates for them and their production)

RN 786704-40-3 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 2-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14; H01L051-30

CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 76

ST org **electroluminescent** device aminostyrylnaphthalene deriv; aminostyrylnaphthalene deriv intermediate prodn; condensation aminobenzaldehyde deriv phosphonate ester phosphonium aminostyrylnaphthalene deriv prodn

IT Wittig reaction
(organic **electroluminescent** devices and aminostyrylnaphthalene compds. and synthesis intermediates for them and their production)

IT **Electroluminescent** devices
(organic; organic **electroluminescent** devices and aminostyrylnaphthalene compds. and synthesis intermediates for them and their production)

IT **786704-40-3P**
(organic **electroluminescent** devices and aminostyrylnaphthalene compds. and synthesis intermediates for them and their production)

IT 87755-82-6 786704-39-0
(organic **electroluminescent** devices and aminostyrylnaphthalene compds. and synthesis intermediates for them and their production)

L13 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:20777 HCAPLUS
DOCUMENT NUMBER: 140:50071
TITLE: Organic **electroluminescent** device or display using styryl compound
INVENTOR(S): Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro; Ueda, Naoyuki
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: PCT Int. Appl., 142 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003104	A1	20040108	WO 2003-JP8043	2003 0625
W: CN, KR, SG, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
CN 1505448	A	20040616	CN 2002-161134	2002 1130
JP 2004087463	A2	20040318	JP 2003-165852	2003 0611
EP 1516902	A1	20050323	EP 2003-761798	2003 0625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.:
JP 2002-185675 A 2002 0626
JP 2003-165852 A 2003 0611
WO 2003-JP8043 W 2003 0625

OTHER SOURCE(S): MARPAT 140:50071

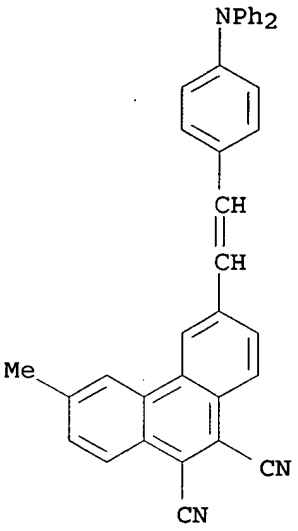
AB The invention refers to an organic **electroluminescent** element comprising a glass plate, a cathode, a hole transport layer, a **luminescent** layer, an electron transport layer and an anode, wherein the **luminescent** layer is comprised of a mixture of at least one styryl compound YCH:CHX [Y = aminophenyl; X = cyano- or methyl-substituted Ph or aryl] and a charge transport material.

IT **445256-73-5 445256-74-6 445256-76-8 445256-77-9 445256-78-0 445256-81-5 445256-82-6 445256-83-7 445256-86-0 637033-83-1 637033-86-4 637033-89-7**
(organic **electroluminescent** device or display with

styryl compound)

RN 445256-73-5 HCAPLUS

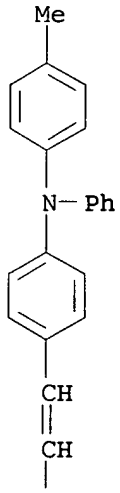
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-(diphenylamino)phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)



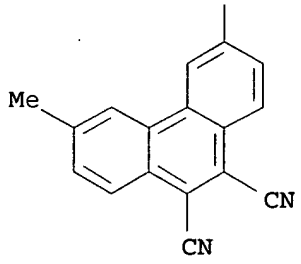
RN 445256-74-6 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

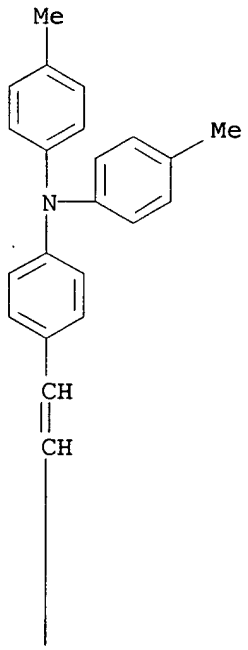


PAGE 2-A

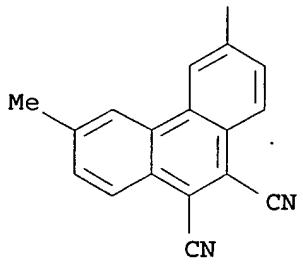


RN 445256-76-8 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A

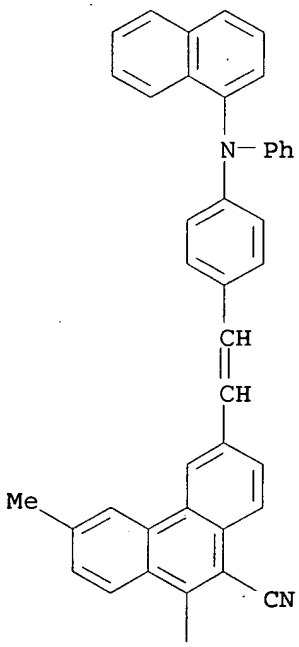


PAGE 2-A



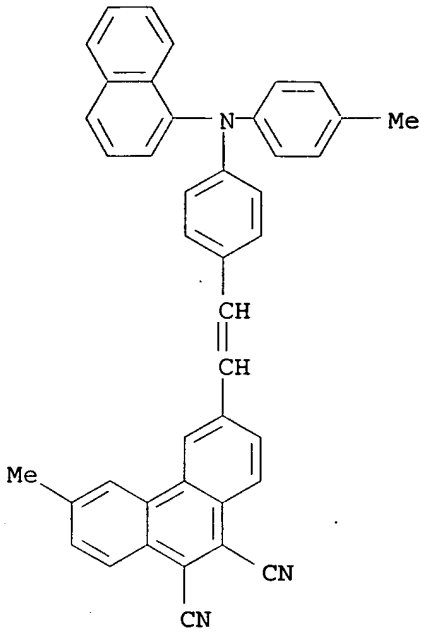
RN 445256-77-9 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

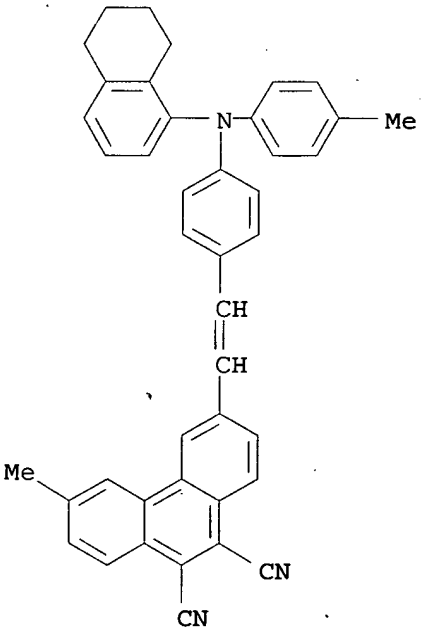


PAGE 2-A

RN 445256-78-0 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

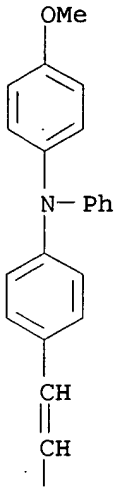


RN 445256-81-5 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

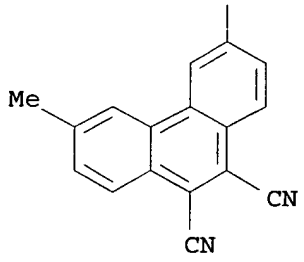


RN 445256-82-6 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

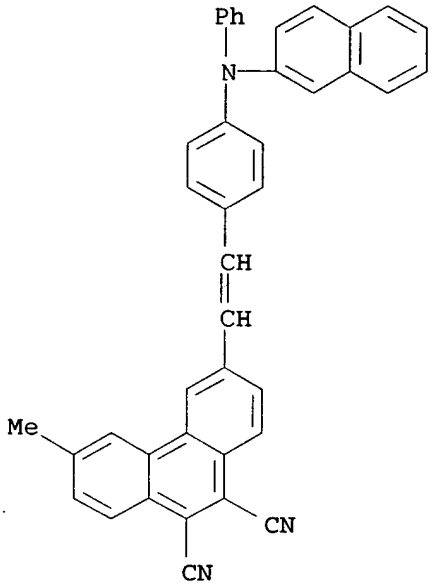
PAGE 1-A



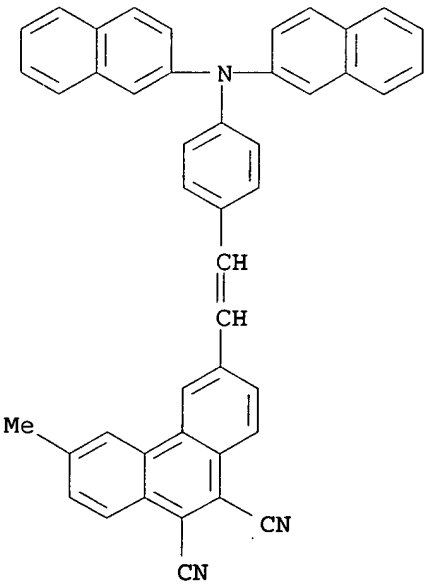
PAGE 2-A



RN 445256-83-7 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

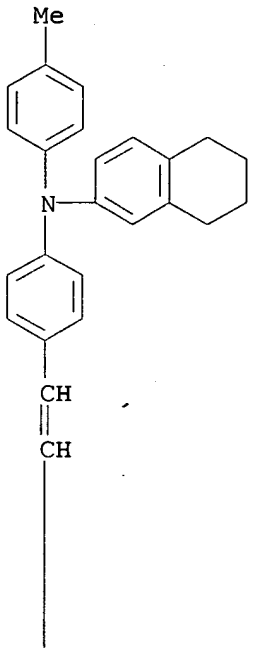


RN 445256-86-0 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-(di-2-naphthalenylamino)phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

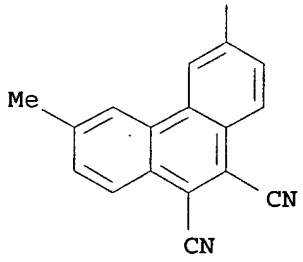


RN 637033-83-1 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-2-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

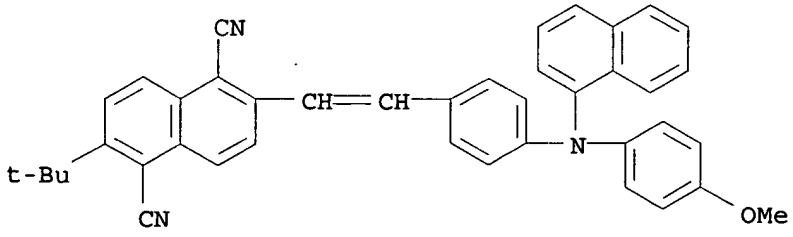
PAGE 1-A



PAGE 2-A

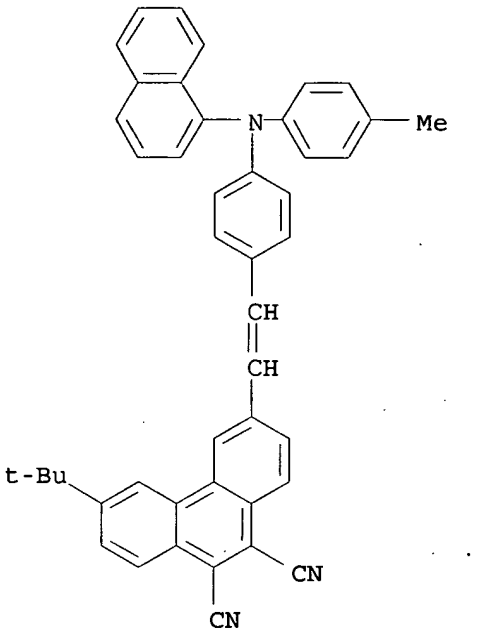


RN 637033-86-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2-(1,1-dimethylethyl)-6-[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 637033-89-7 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-(1,1-dimethylethyl)-6-[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14

CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device display styryl compd

IT **Electroluminescent** devices
(displays; organic **electroluminescent** device or display with styryl compound)

IT **Luminescent** screens
(**electroluminescent**; organic **electroluminescent** device or display with styryl compound)

IT **Electroluminescent** devices
(organic **electroluminescent** device or display with styryl compound)

IT 321735-50-6 321735-63-1 366793-10-4 366793-12-6
422510-78-9 **445256-73-5 445256-74-6**
445256-76-8 445256-77-9 445256-78-0
445256-81-5 445256-82-6 445256-83-7
445256-86-0 637033-22-8 637033-24-0 637033-26-2
637033-28-4 637033-29-5 637033-30-8 637033-31-9
637033-32-0 637033-33-1 637033-34-2 637033-35-3
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637033-45-5 637033-46-6 637033-47-7 637033-48-8
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637033-73-9 637033-74-0 637033-76-2 637033-77-3

637033-78-4 637033-79-5 637033-80-8 637033-81-9
637033-82-0 **637033-83-1** 637033-84-2 637033-85-3
637033-86-4 637033-87-5 637033-88-6
637033-89-7 637033-90-0
(organic **electroluminescent** device or display with styryl compound)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:809883 HCAPLUS
DOCUMENT NUMBER: 139:330272
TITLE: Method for electrophotographic image formation using positively charging monolayer-type organic electrophotographic photoreceptor
INVENTOR(S): Inagaki, Yoshio
PATENT ASSIGNEE(S): Kyocera Mita Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003295487	A2	20031015	JP 2002-98030	2002 0329

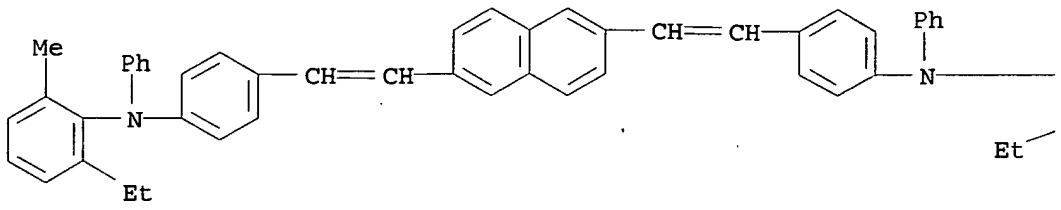
PRIORITY APPLN. INFO.: JP 2002-98030 2002 0329

AB The title method, which uses a pos. charging monolayer-type organic electrophotog. photoreceptor and contains a cleaning process of residual toner on the photoreceptor, includes the steps of: measuring the thickness of the **light**-sensitive layer of the photoreceptor and charging amount of the photoreceptor; calculating the exposure intensity, which shows ≤26 V variation after exposure on the **light**-sensitive layer having ≥15 μm difference in the thickness. The method uses a phthalocyanine charge-generating agent, naphthoquinone charge-transporting compound, and a stilbene-based hole-transporting compound The method provides constant **light** intensity for photoreceptor exposure after surface wearing of the photoreceptor.

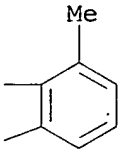
IT **286851-40-9**
(hole transporting agent; electrophotog. photoreceptor)

RN 286851-40-9 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-(2-ethyl-6-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



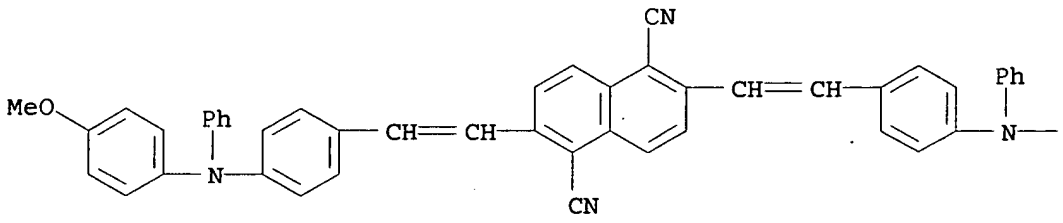
PAGE 1-B



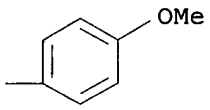
IC ICM G03G005-06
ICS G03G015-00
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 55035-45-5 119564-31-7 254897-50-2 267409-41-6
286851-40-9 393586-85-1 612808-08-9
(hole transporting agent; electrophotog. photoreceptor)

L13 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:426713 HCAPLUS
DOCUMENT NUMBER: 139:252434
TITLE: Red **emitting** materials for organic EL display
AUTHOR(S): Ichimura, Mari; Ishibashi, Tadashi; Ueda, Naoyuki; Tamura, Shin-ichiro
CORPORATE SOURCE: Organic EL Development, Core Technology & Network Company, Japan
SOURCE: Proceedings of the Sony Research Forum (2002), Volume Date 2001, 11th, 329-334
CODEN: PSRFFO; ISSN: 1340-3508
PUBLISHER: Soni K.K., R & D Senryakubu
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB We developed novel distyryl compds. aiming red **light-emitting** materials for organic EL active panels. Both **photoluminescence** and **electroluminescence** spectra have the peaks in the region of 630-650 nm. They have good fluorescence quantum yield(0.8-0.97, in solution), and high glass transition temperature(103-120°C). Use of BSN as an **emitting** material enables fabrication of fine red EL device that exhibits high luminance efficiency.
IT **333339-14-3P**
(red **emitting** materials for organic EL display)
RN 333339-14-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 22
ST red **emitting** material org EL display
IT **Electroluminescent** devices
(displays; red **emitting** materials for organic EL display)
IT Electron density
(distyryl compds.; red **emitting** materials for organic EL display)
IT **Luminescent** screens
(**electroluminescent**; red **emitting** materials for organic EL display)
IT Frontier molecular orbital
(of distyryl compds.; red **emitting** materials for organic EL display)
IT Fluorescence
Glass transition temperature
Luminescence
Luminescence, electroluminescence
(red **emitting** materials for organic EL display)
IT 232948-26-4P
(BSB-BCN; red **emitting** materials for organic EL display)
IT 251101-60-7P 253868-91-6P 253868-96-1P 288626-79-9P
288626-80-2P **333339-14-3P**
(red **emitting** materials for organic EL display)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:656370 HCAPLUS
DOCUMENT NUMBER: 137:192554
TITLE: Vapor phase deposition of organic material thin film, its apparatus, and fabrication of organic **electroluminescent** device with the thin film
INVENTOR(S): Tamura, Shinichiro; Ishibashi, Tadashi
PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002246175	A2	20020830	JP 2001-39408	2001 0216

PRIORITY APPLN. INFO.: JP 2001-39408 2001 0216

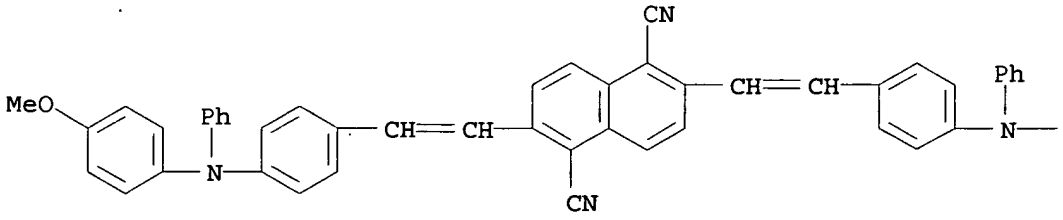
AB The invention provides a process and apparatus for deposition of organic material thin films having good characteristics from a plurality of materials which behave differently under heat by optimizing the conditions for deposition for each raw materials. In the deposition of a 1st material which evaps. after being melted under heat and/of a 2nd material which sublimes under heat, a 1st container having a 1st opening having the same or larger size than the surface area of the contained, said organic material, the flying angle of the vapor of the organic material from the opening being ≥90°, and a 2nd container having a 2nd opening smaller than the surface area of the contained, said organic material. The 1st and the 2nd containers (evaporator boats) will be made from Ta, Mo, W, or BN. Evaporation/sublimation velocities will be regulated properly, thereby providing films with uniform thicknesses.

IT **333339-14-3**
(hole transporting layer; apparatus design for vapor phase deposition of organic material thin film for manufacture of organic EL device)

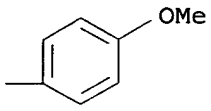
RN 333339-14-3 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



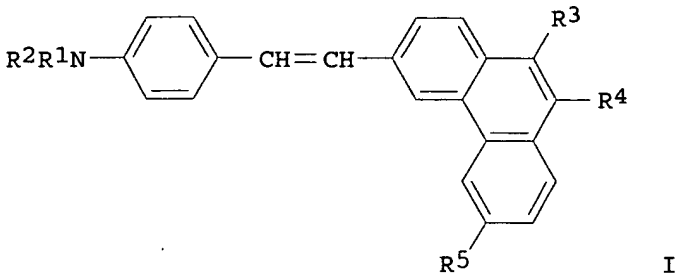
IC ICM H05B033-10
ICS C23C014-12; C23C014-24; H05B033-14; H05B033-22
CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
ST vapor phase deposition org material thin film; org **electroluminescent** material vapor phase deposition; evaporator source design org **electroluminescent** device fabrication
IT **Electroluminescent** devices
(organic; apparatus design for vapor phase deposition of organic material thin film for manufacture of organic EL device)
IT 167218-46-4 **333339-14-3**
(hole transporting layer; apparatus design for vapor phase deposition of organic material thin film for manufacture of organic EL device)

L13 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:609614 HCAPLUS
DOCUMENT NUMBER: 137:161463
TITLE: Aminostyrylphenanthrenes having high luminance for red-**emitting** organic **electroluminescent** materials, their intermediates, and their preparation
INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002226722	A2	20020814	JP 2001-21006	2001 0130

PRIORITY APPLN. INFO.: JP 2001-21006 2001 0130

OTHER SOURCE(S): MARPAT 137:161463
GI



I

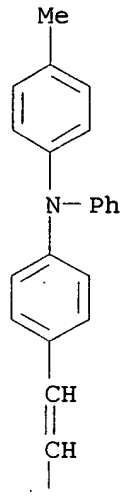
AB Aminostyrylphenanthrenes shown as I [R1 = (substituted) aryl; R2 = unsubstituted aryl; R3-R5 = H, cyano, hydrocarbyl, etc.] are prepared by condensation of 4-(N,N-diarylamino)benzaldehydes with phosphonic acid esters and/or phosphoniums which are prepared by reacting halogenated phenanthrenes (prepared from phenanthrenes and N-halogenated succinimides) with trialkyl phosphites or PPh3. I are useful for organic **electroluminescent** material which **emit** red **lights** whose maximum emission wavelength can be varied based on substituents introduced to the structures. Moreover, I has high-m.p., good heat resistance, enhanced elec., thermal, or chemical stabilities, are amorphous which easily give glass states, and are sublimable and hence formation of amorphous films by vapor deposition is easy.

IT **445256-74-6P 445256-76-8P 445256-77-9P**
445256-78-0P 445256-82-6P 445256-83-7P
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

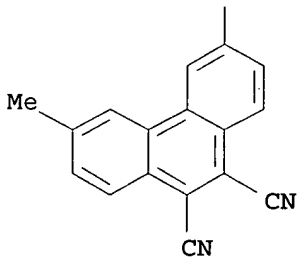
RN 445256-74-6 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

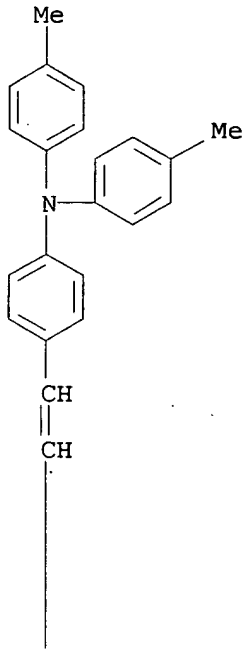


PAGE 2-A

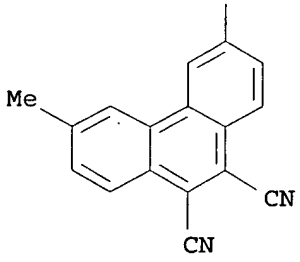


RN 445256-76-8 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A

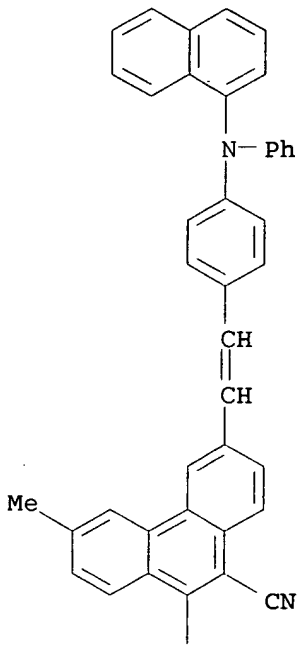


PAGE 2-A



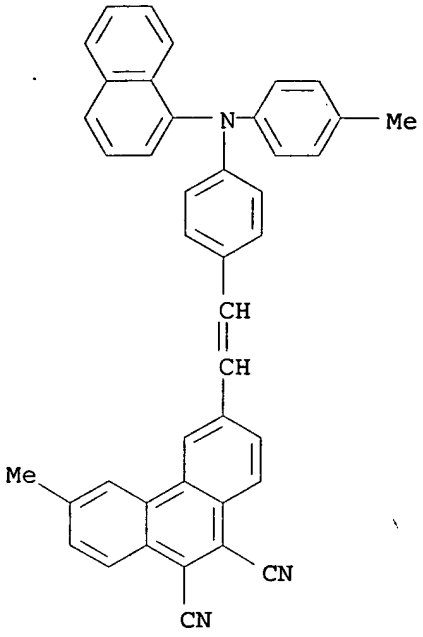
RN 445256-77-9 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



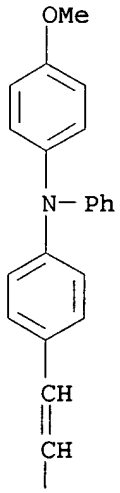
PAGE 2-A

RN 445256-78-0 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

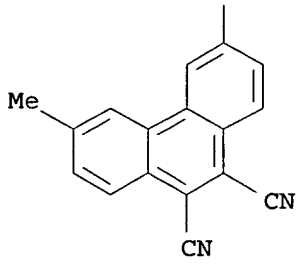


RN 445256-82-6 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

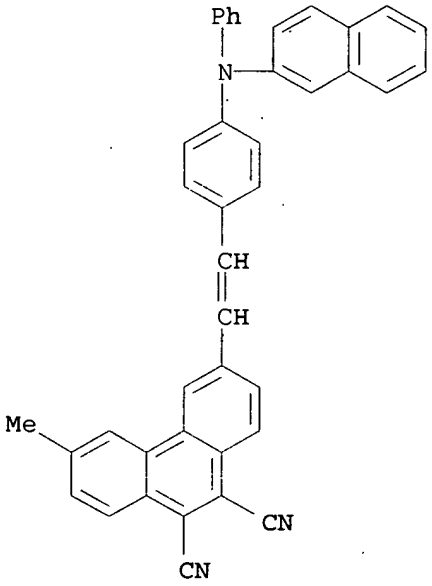
PAGE 1-A



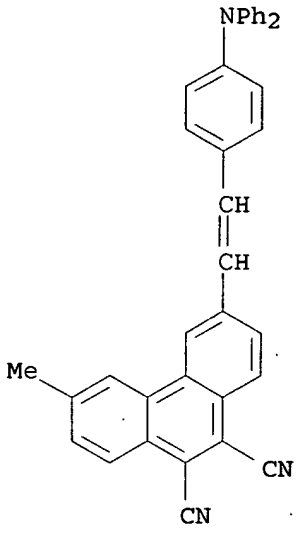
PAGE 2-A



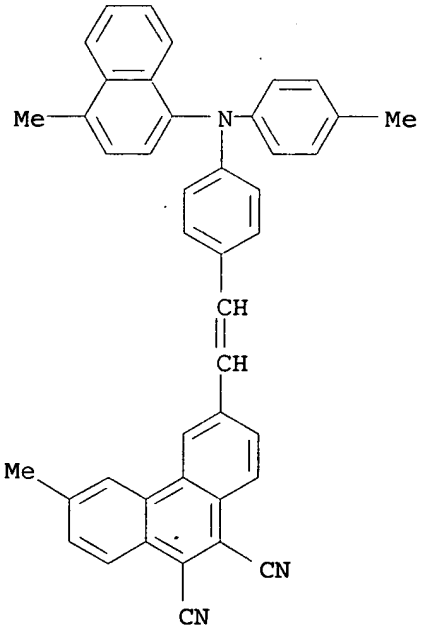
RN 445256-83-7 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IT **445256-73-5 445256-79-1 445256-80-4**
445256-81-5 445256-84-8 445256-85-9
445256-86-0
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)
RN 445256-73-5 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-(diphenylamino)phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

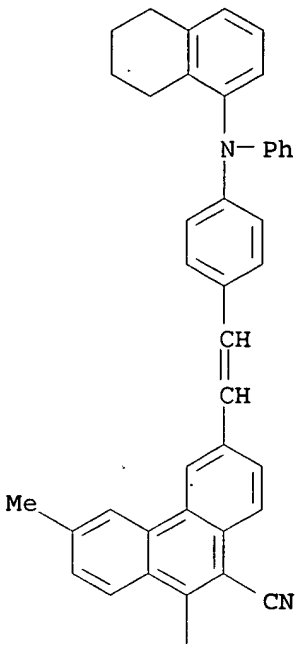


RN 445256-79-1 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methyl-1-naphthalenyl)(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



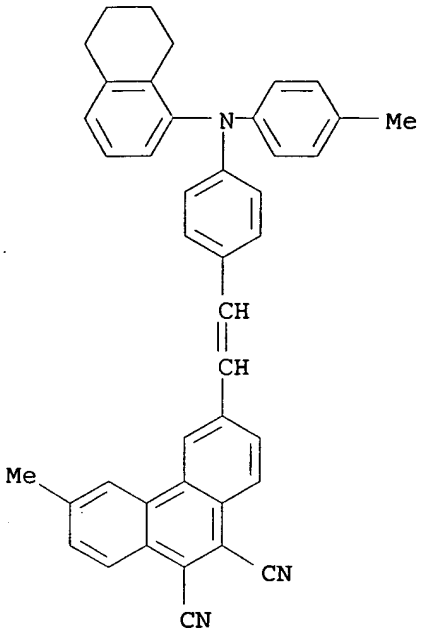
RN 445256-80-4 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



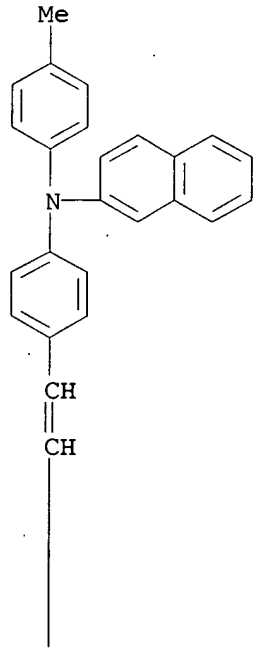
PAGE 2-A

RN 445256-81-5 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

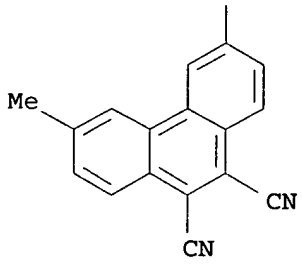


RN 445256-84-8 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-methyl-6-[2-[4-[(4-methylphenyl)-2-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

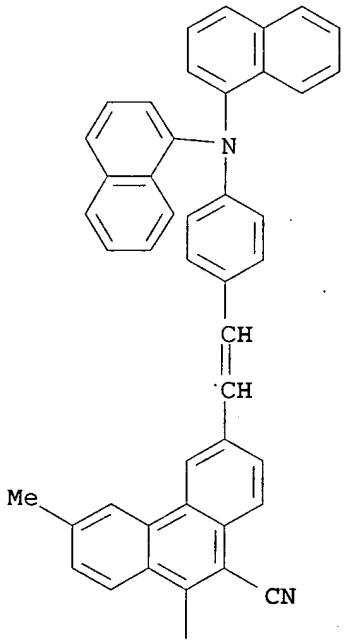


PAGE 2-A



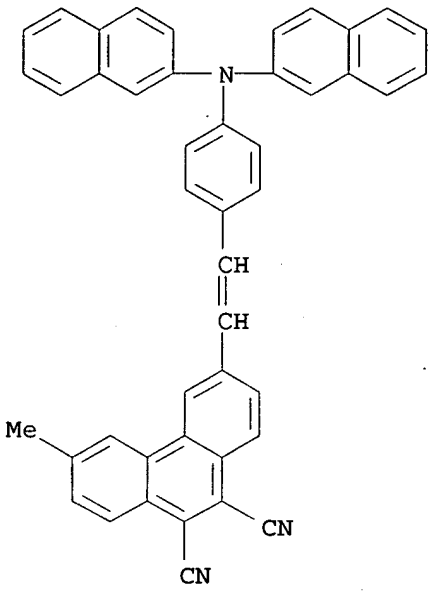
RN 445256-85-9 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

RN 445256-86-0 HCAPLUS
CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-(di-2-naphthalenylamino)phenyl]ethenyl]-6-methyl- (9CI) (CA INDEX NAME)



IC ICM C09B057-00
ICS C07C253-30; C07C255-52; C07C255-58; C07F009-40; C07F009-54; C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, **73**

ST aminostyrylphenanthrene prepn red **emitting** org **electroluminescent** substance; diarylamino benzaldehyde phosphonic acid ester condensation; phosphonium condensation diarylamino benzaldehyde phosphor prepn

IT **Electroluminescent** devices
Phosphors
(red-**emitting**; preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT 150405-69-9
(electron-transporting layer; preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT 139255-17-7
(hole-transporting layer; preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT 445256-90-6P 445256-92-8P
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT **445256-74-6P 445256-76-8P 445256-77-9P 445256-78-0P 445256-82-6P 445256-83-7P**
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT 128-08-5, N-Bromosuccinimide 603-35-0, Triphenylphosphine, reactions 42906-19-4 87755-82-6 89115-21-9 131660-61-2 176701-25-0 445256-87-1 445256-88-2 445256-89-3 445256-91-7
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

IT **445256-73-5 445256-79-1 445256-80-4**
445256-81-5 445256-84-8 445256-85-9
445256-86-0
(preparation of aminostyrylphenanthrenes having high luminance for red-**emitting** organic EL materials)

L13 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:553526 HCAPLUS
DOCUMENT NUMBER: 137:132204
TITLE: Organic **electroluminescent** (EL) elements for full-color flat displays with high brightness and durability
INVENTOR(S): Tamura, Shinichiro; Ishibashi, Tadashi; Ichimura, Mari
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002208488	A2	20020726	JP 2001-4859	2001 0112

PRIORITY APPLN. INFO.: JP 2001-4859 2001 0112

AB The element has an organic layer (including a **light-emitting** region) between an anode and a cathode, wherein the organic layer contains an elec. conductive polymer including a styryl compound (a distyryl compound, preferably) chemical bonded to the main or side chain of the polymer.

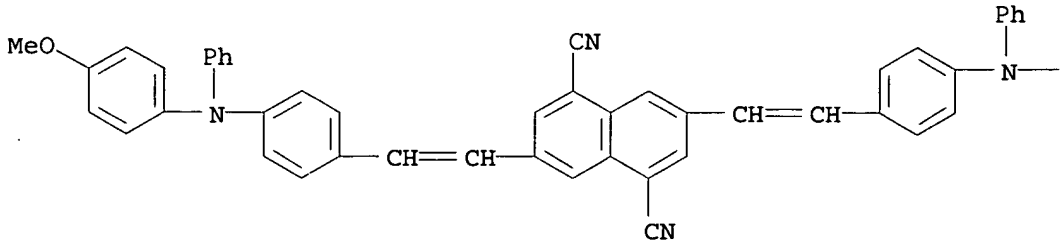
IT **443971-37-7**
(**light emitter**; organic EL elements containing elec. conductive polymers having distyryl structures with high brightness and durability)

RN 443971-37-7 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 3-[2-[4-[[4-[4-[(2-ethylhexyl)oxy]-2,5-diiodophenoxy]phenyl]phenylamino]phenyl]ethenyl]-7-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-, polymer with 1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and 2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

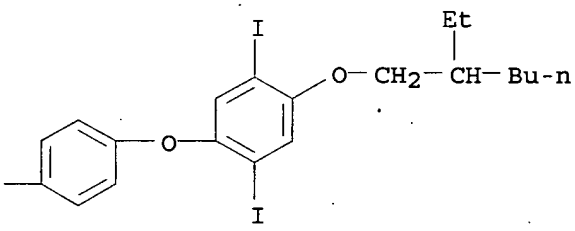
CM 1

CRN 443971-36-6
CMF C67 H56 I2 N4 O3

PAGE 1-A

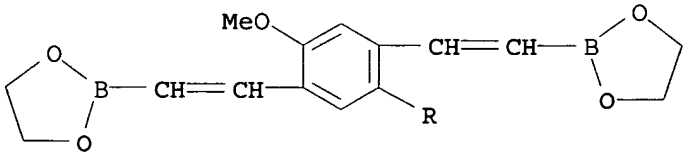


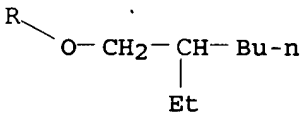
PAGE 1-B



CM 2

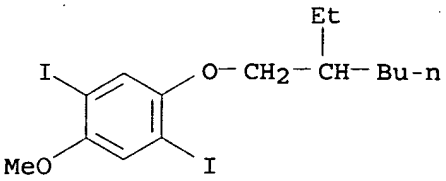
CRN 443971-32-2
CMF C23 H34 B2 O6





CM 3

CRN 262355-67-9
CMF C15 H22 I2 O2



IC ICM H05B033-14
ICS C09K011-06
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, **73**
ST org EL full color flat display; **electroluminescent** display high brightness styryl polymer; styryl graft polyphenylenevinylene elec cond display
IT Conducting polymers
(**light emitter**; organic EL elements containing elec. conductive polymers having distyryl structures with high brightness and durability)
IT **Electroluminescent** devices
(organic EL elements containing elec. conductive polymers having distyryl structures with high brightness and durability)
IT 443971-33-3 443971-35-5 **443971-37-7** 443971-39-9
443971-41-3 443971-43-5
(**light emitter**; organic EL elements containing elec. conductive polymers having distyryl structures with high brightness and durability)

L13 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:349431 HCAPLUS
DOCUMENT NUMBER: 136:377566
TITLE: Red organic **electroluminescence** elements with good color stability and high brightness for displays
INVENTOR(S): Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro; Ueda, Naoyuki
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002134276	A2	20020510	JP 2000-329902	2000 1030
WO 2003091357	A1	20031106	WO 2002-JP4097	2002 0424
W: CN, KR, SG, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
EP 1498465	A1	20050119	EP 2002-722757	2002

0424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR
US 2004202891 A1 20041014 US 2003-297017
2003
0520
PRIORITY APPLN. INFO.: JP 2000-329902 A
2000
1030
WO 2002-JP4097 W
2002
0424

OTHER SOURCE(S): MARPAT 136:377566
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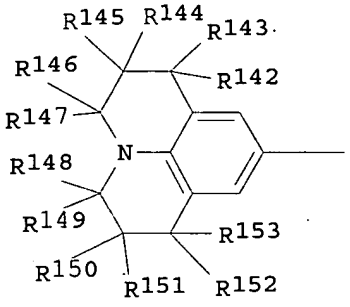


I

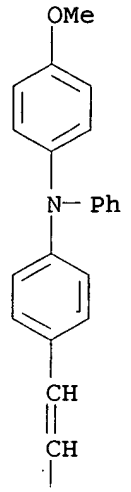
AB The **electroluminescence** (EL) elements contain aminostyryl compds. Y1CH:CHX1CH:CHY2 and/or Y3CH:CHX2 [X1 = substituted anthracenylene (substituent = halo, nitro, cyano, CF3, etc.); X2 = (un)substituted Ph, naphthalenyl, anthracenyl, phenanthrenyl, pyrenyl (substituent = H, halo, nitro, cyano, CF3); Y1-3 = H, alkyl, aryl that may contain C6H4NZ1Z2, I, or (un)substituted Ph; Z1, Z2 = H, alkyl, aryl; R142-153 = H, alkyl, aryl, alkoxy, halo, etc.].

IT **422510-81-4 422510-85-8**
(red organic EL elements with good color stability and high brightness for displays)

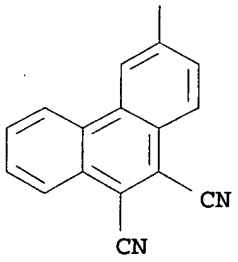
RN 422510-81-4 HCAPLUS

CN 9,10-Phenanthrenedicarbonitrile, 3-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

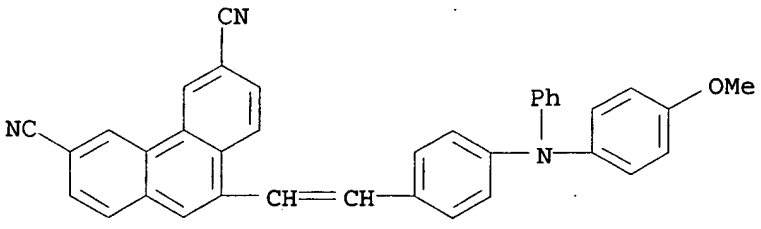
PAGE 1-A



PAGE 2-A



RN 422510-85-8 HCAPLUS
CN 3,6-Phenanthrenedicarbonitrile, 9-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): **73**
ST org **electroluminescence** element red aminostyryl brightness; EL display aminostyryl phosphor red stability
IT Phosphors
(**electroluminescent**; red organic EL elements with good color stability and high brightness for displays)
IT **Electroluminescent** devices
(red-**emitting**; red organic EL elements with good color stability and high brightness for displays)
IT 101247-14-7 127697-16-9 253869-00-0 261632-47-7
261632-87-5 321709-39-1 321735-48-2 321735-63-1
422510-46-1 422510-49-4 422510-67-6 422510-70-1
422510-72-3 422510-75-6 422510-76-7 422510-78-9
422510-81-4 422510-83-6 422510-84-7
422510-85-8
(red organic EL elements with good color stability and high brightness for displays)

L13 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:253302 HCAPLUS
DOCUMENT NUMBER: 136:301740
TITLE: Electrophotographic photoreceptors having specific polycarbonate binder resin in **light** sensitive layer
INVENTOR(S): Azuma, Jun; Watanabe, Yukimasa; Honma, Toshikazu; Yashima, Ayako; Uchida, Maki; Miyamoto, Eiichi
PATENT ASSIGNEE(S): Kyocera Mita Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002099103	A2	20020405	JP 2000-292683	2000 0926
JP 3583705	B2	20041104		

PRIORITY APPLN. INFO.: JP 2000-292683 2000 0926

OTHER SOURCE(S): MARPAT 136:301740
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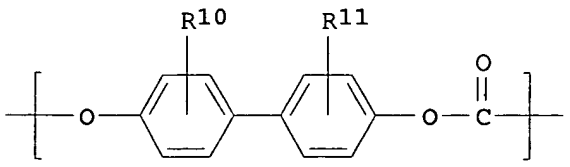


I

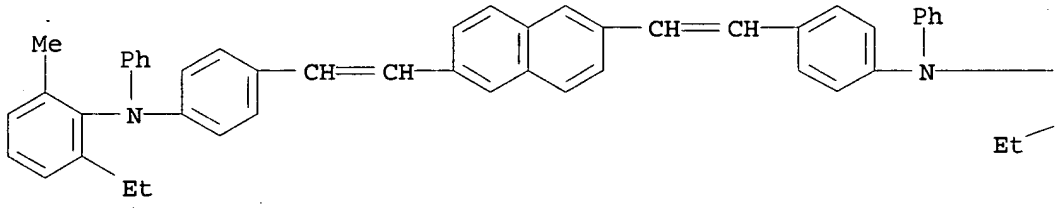
AB The title photoreceptor has a **light**-sensitive layer, which contains a charge-generating agent, a charge-transporting agent, and a polycarbonate binder resin on an electroconductive support, wherein the polycarbonate binder resin has repeating unit I (R10-11 = H, C1-3 alkyl), wherein the charge-generating agent has ≥40 % charge-generating efficiency at 5X105 V/cm field strength, and wherein the charge-transporting agent contains a hole-transporting agent of ≥5X10-6 cm2/V/s hole-transporting speed at 5X105 V/cm field strength. The photoreceptor shows the low wearing on the **light** sensitive layers, the good durability, and the high sensitivity.

IT **286851-40-9**
(hole-transporting agent for electrophotog. photoreceptor)

RN 286851-40-9 HCAPLUS

CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-(2-ethyl-6-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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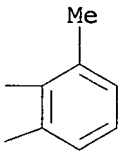


IC ICM G03G005-05
ICS G03G005-06; C09B067-20

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35

ST electrophotog photoreceptor polycarbonate binder resin **light** sensitive layer

IT Polycarbonates, uses
(binder resin in **light**-sensitive layer of electrophotog. photoreceptor)

IT Electrophotographic photoconductors (photoreceptors)
(electrophotog. photoreceptors having specific polycarbonate binder resin in **light** sensitive layer)

IT 143480-22-2 395681-23-9
(binder resin in **light**-sensitive layer of electrophotog. photoreceptor)

IT 1473-31-0 124591-08-8 151026-65-2 168091-65-4 174701-47-4 227610-08-4 254897-50-2 **286851-40-9** 395681-26-2
(hole-transporting agent for electrophotog. photoreceptor)

L13 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:763124 HCAPLUS
DOCUMENT NUMBER: 135:325069
TITLE: Organic **electroluminescent** element and **luminescent** apparatus employing the same
INVENTOR(S): Ishibashi, Tadashi; Ichimura, Mari; Ueda, Naoyuki; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

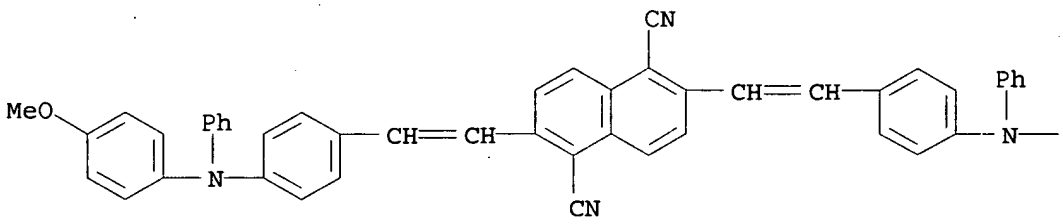
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001077253	A1	20011018	WO 2001-JP3051	2001 0409
W: KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2001291591	A2	20011019	JP 2000-106430	2000 0407
EP 1205528	A1	20020515	EP 2001-919842	2001 0409
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 2002106530	A1	20020808	US 2002-9021	2002 0319
PRIORITY APPLN. INFO.:			JP 2000-106430 A	2000 0407
			WO 2001-JP3051 W	2001 0409

OTHER SOURCE(S): MARPAT 135:325069
AB Title element contains a compound having a high fluorescence yield and excellent thermal stability and **emits** a stable red **light** having a high color purity and a high luminance. Title element comprises a glass substrate and disposed thereon in this order, a transparent ITO electrode, a hole-transporting layer, an electron-transporting layer, and a metal electrode, wherein the hole-transporting layer and/or the electron-transporting layer comprises a layer of a mixture comprising ≥1 aminostyryl compound represented by the general formula Y1CH:CHX1CH:CHY2 (X1 = aryl substituented by such as NO2, etc., each Y1 and Y2 has aminophenyl, etc. in the skeleton) and a hole-blocking layer is disposed between the hole-transporting layer and the electron-transporting layer.
IT **333339-14-3 333339-15-4 333339-16-5**

333339-20-1 367509-37-3 367509-38-4
367509-39-5 367509-40-8
(organic **electroluminescent** element and **luminescent** apparatus employing the same)

RN 333339-14-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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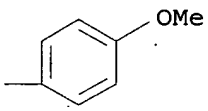
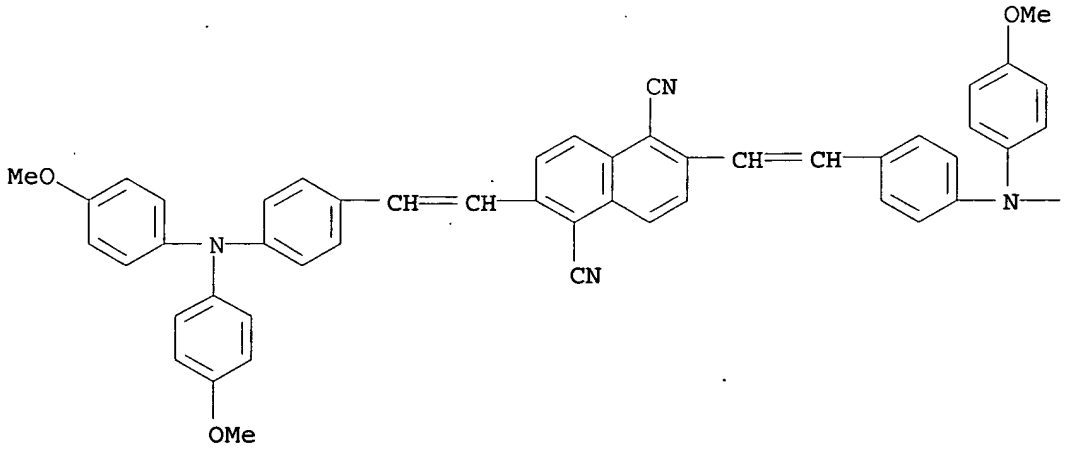


RN 333339-15-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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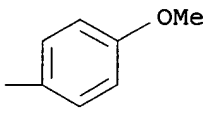
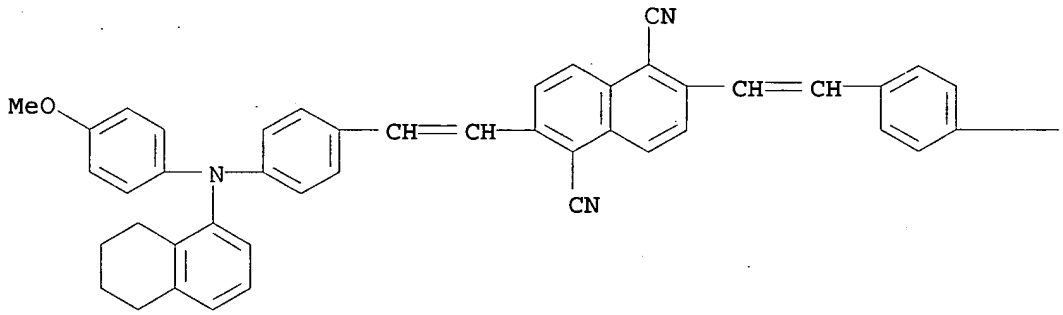


RN 333339-16-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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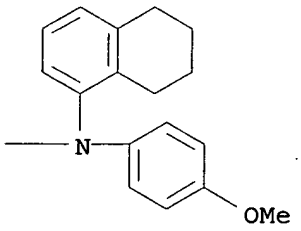
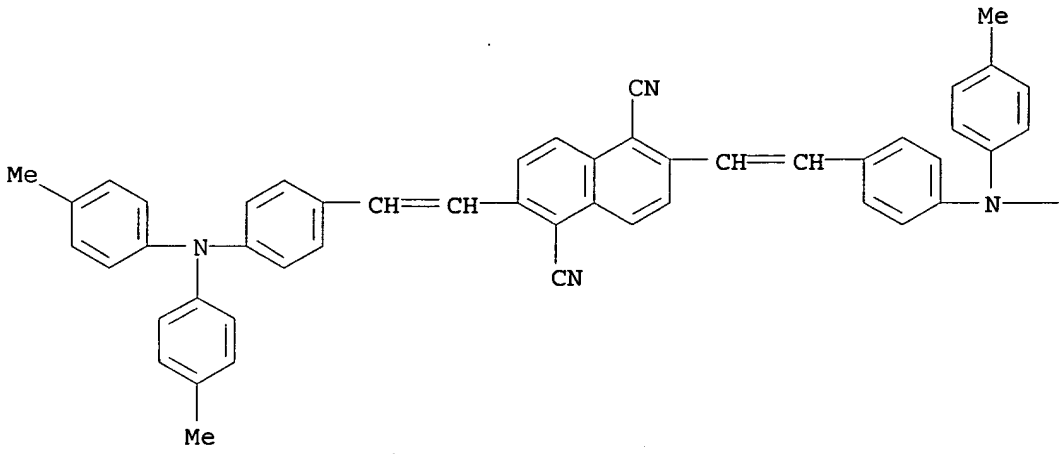


RN 333339-20-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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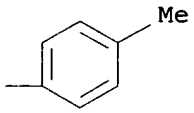
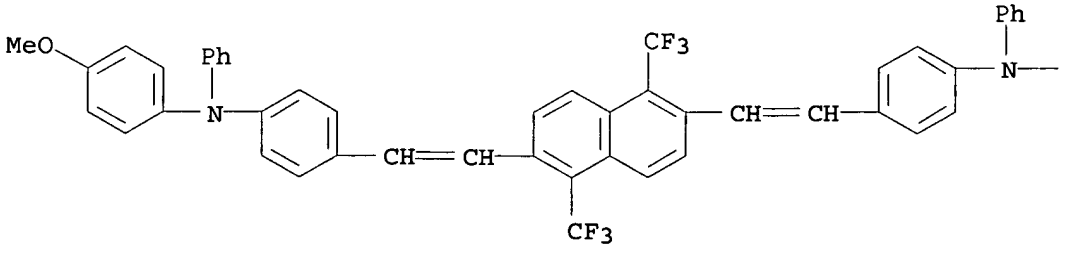


RN 367509-37-3 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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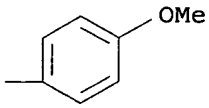
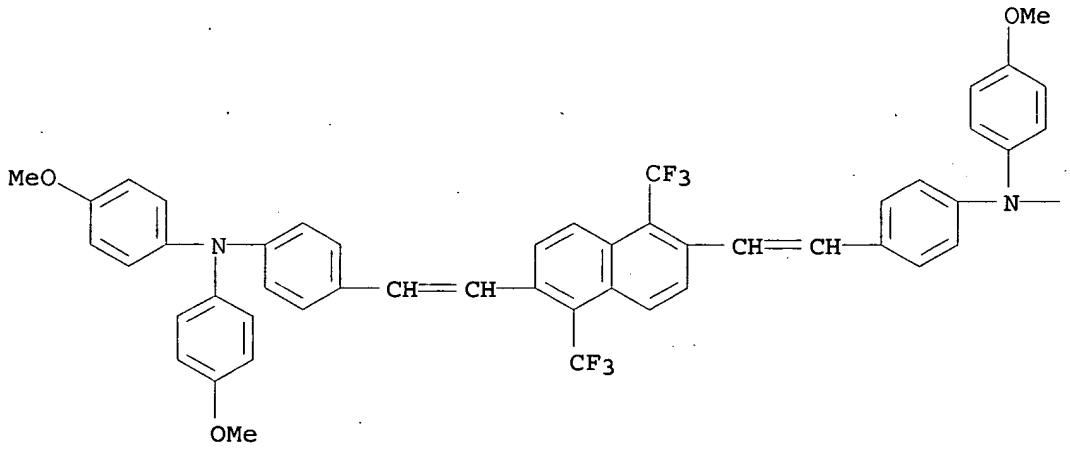


RN 367509-38-4 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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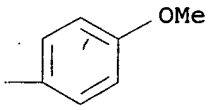
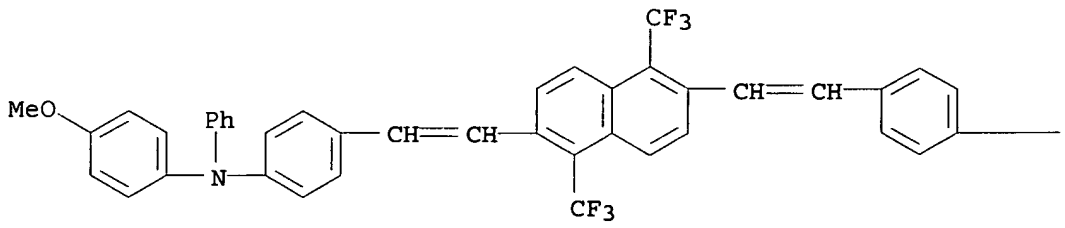


RN 367509-39-5 HCAPLUS
CN 1-Naphthalenamine, 5,6,7,8-tetrahydro-N-(4-methoxyphenyl)-N-[4-[2-[6-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-1,5-bis(trifluoromethyl)-2-naphthalenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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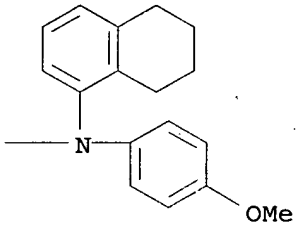
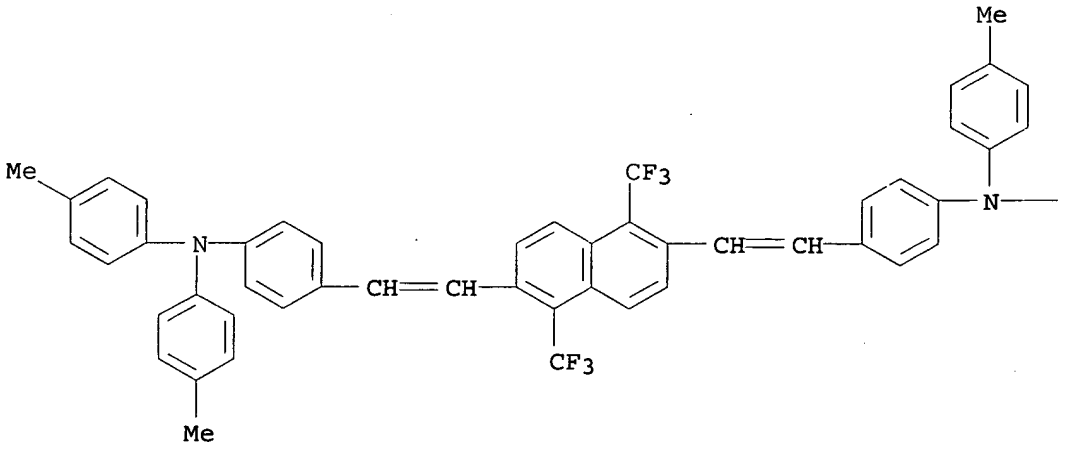


RN 367509-40-8 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

PAGE 1-A



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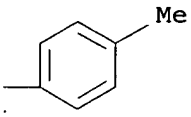


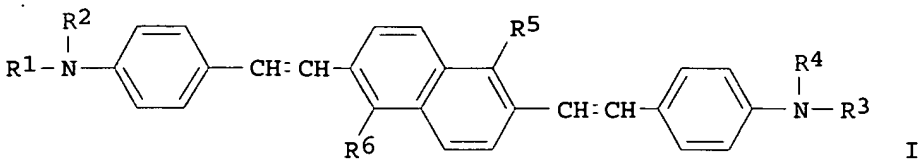
IC ICM C09K011-06
ICS H05B033-14; H05B033-22
CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** element app aminostyryl compd
IT **Electroluminescent** devices
(organic **electroluminescent** element and **luminescent** apparatus employing the same)
IT 4733-39-5 51325-91-8 123847-85-8, α-NPD 232948-26-4
251101-60-7 253868-17-6 253868-91-6 288626-78-8
288626-79-9 288626-80-2 288626-81-3 288626-82-4
288626-90-4 322475-09-2 **333339-14-3**
333339-15-4 333339-16-5 333339-20-1
367509-22-6 367509-23-7 367509-24-8 367509-25-9
367509-26-0 367509-27-1 367509-28-2 367509-29-3
367509-30-6 367509-31-7 367509-32-8 367509-33-9
367509-34-0 367509-35-1 367509-36-2 **367509-37-3**
367509-38-4 367509-39-5 367509-40-8
367509-41-9 367509-42-0
(organic **electroluminescent** element and **luminescent** apparatus employing the same)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:269310 HCAPLUS
DOCUMENT NUMBER: 134:280613
TITLE: Preparation of **luminescent** bis(aminostyryl)naphthalenes and their intermediates
INVENTOR(S): Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 81 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001106658	A2	20010417	JP 1999-285255	1999 1006

EP 1092704	A2	20010418	EP 2000-121753	2000 1005
EP 1092704	A3	20010425		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6492557	B1	20021210	US 2000-680386	2000 1005
US 2003069448	A1	20030410	US 2002-231355	2002 0829
US 6727379	B2	20040427		
US 2003073867	A1	20030417	US 2002-231419	2002 0829
US 6897341	B2	20050524		
US 2003204115	A1	20031030	US 2003-389787	2003 0317
US 6790974	B2	20040914		
US 2003212289	A1	20031113	US 2003-390381	2003 0317
US 6765108	B2	20040720		
US 2003220523	A1	20031127	US 2003-392435	2003 0319
US 6774257	B2	20040810		
US 2005052133	A1	20050310	US 2004-955792	2004 0930
PRIORITY APPLN. INFO.:			JP 1999-285254 A	1999 1006
			JP 1999-285255 A	1999 1006
			US 2000-680386 A3	2000 1005
			US 2000-704968 A3	2000 1102
			US 2002-231355 A3	2002 0829
			US 2002-231419 A3	2002 0829

OTHER SOURCE(S): CASREACT 134:280613; MARPAT 134:280613
GI



I

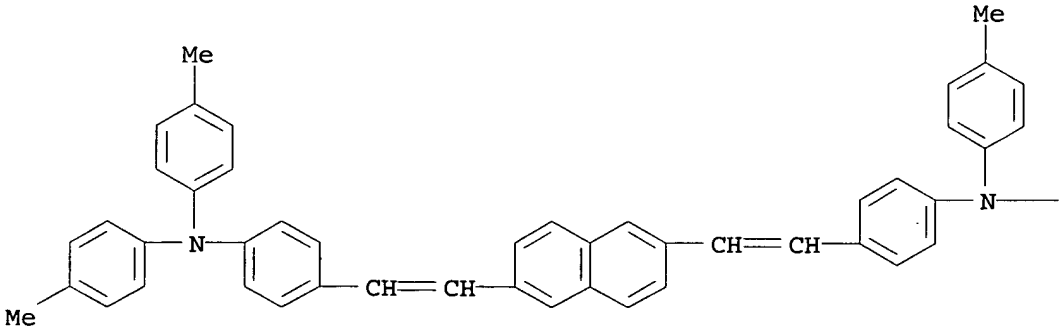
AB Title compds. I [R1-R4 = (un)substituted aryl; R5, R6 = H, cyano, NO2, CF3, halo], useful for **electroluminescent** devices, and their intermediates are prepared 1,5-Dicyano-2,6-bis(diethoxyphosphorylmethyl)naphthalene (preparation given) was treated with NaH followed by p-MeOC6H4NPhC6H4CHO-p in THF/DMF at room temperature for 10 h to give 20% I (R1 = R4 = C6H4OMe-p, R2 = R3 = Ph, R5 = R6 = cyano) having visible absorption maximum at 493 nm and fluorescence maximum at 545 nm.

IT **63804-66-0P 333339-14-3P 333339-15-4P**
333339-16-5P 333339-18-7P 333339-19-8P
333339-20-1P 333339-21-2P 333339-22-3P
333339-23-4P 333339-24-5P 333339-25-6P
333339-26-7P 333339-27-8P 333339-28-9P
333339-30-3P 333339-31-4P 333339-32-5P
333339-34-7P 333339-35-8P 333339-36-9P
333339-37-0P 333339-38-1P 333339-39-2P
333339-40-5P 333339-41-6P 333339-42-7P
333339-44-9P 333339-45-0P 333339-46-1P
333339-47-2P 333339-48-3P 333339-49-4P
333339-50-7P 333339-51-8P 333339-52-9P
333339-53-0P 333339-54-1P 333339-55-2P
333339-56-3P 333339-57-4P 333340-62-8P
333340-65-1P 333340-67-3P
(preparation of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

RN 63804-66-0 HCAPLUS

CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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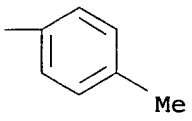
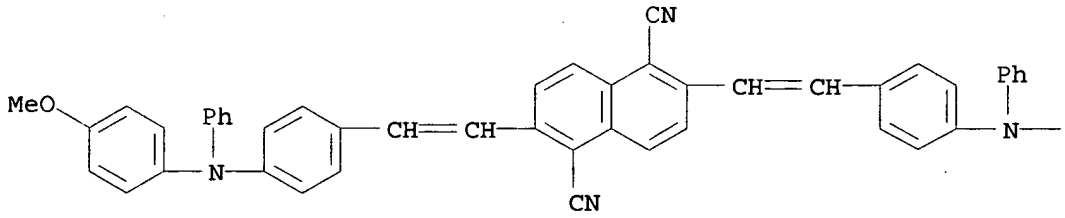


RN 333339-14-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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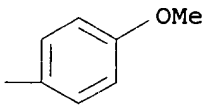
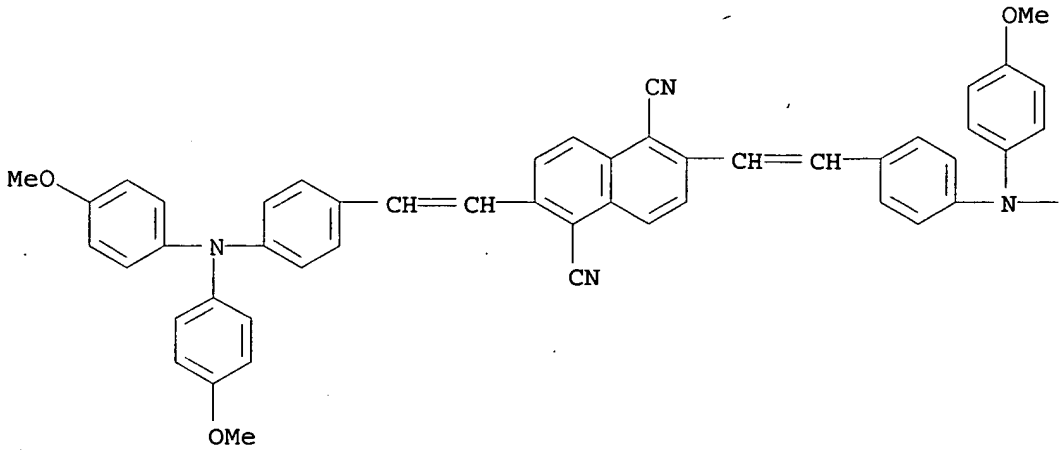


RN 333339-15-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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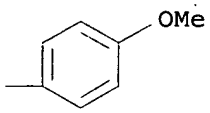
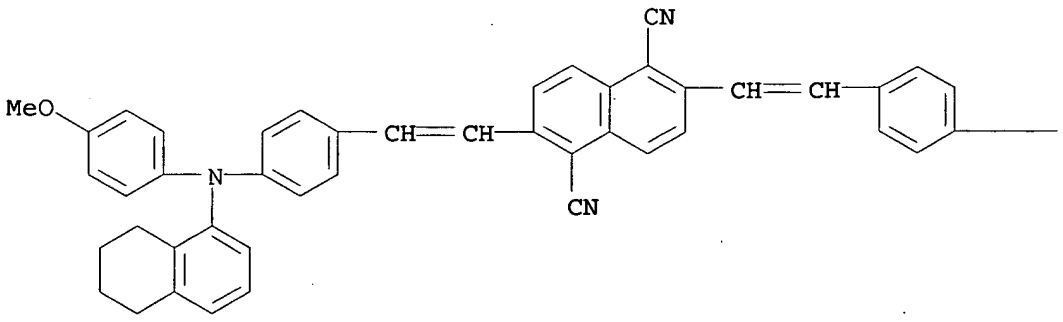


RN 333339-16-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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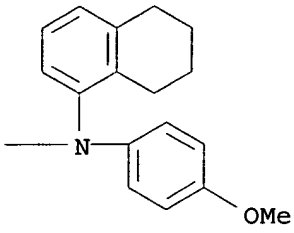

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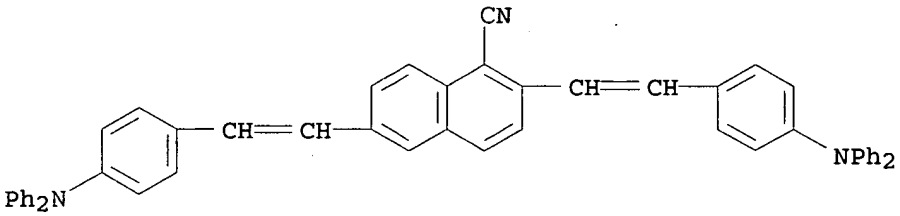
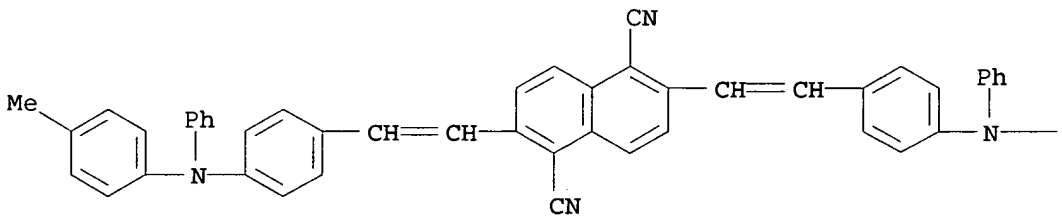
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-19-8 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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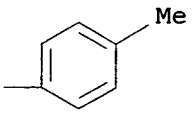
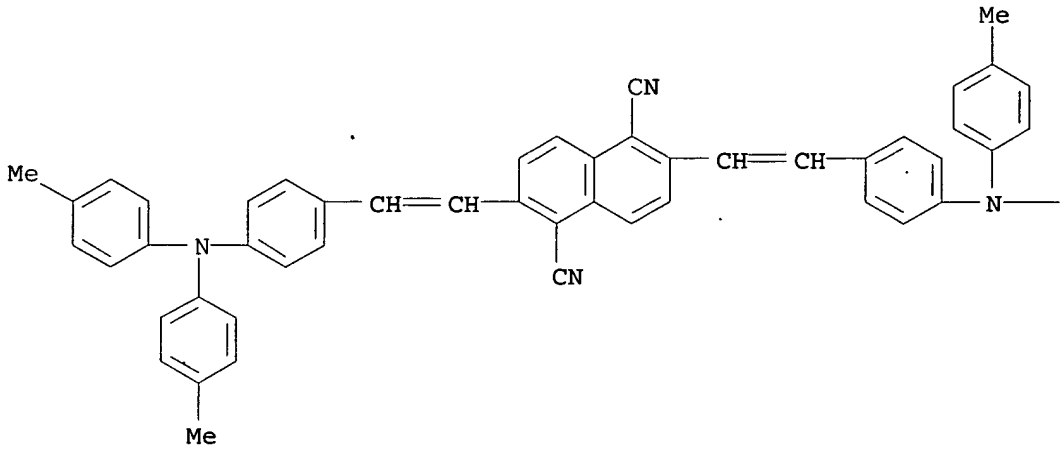


RN 333339-20-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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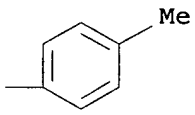
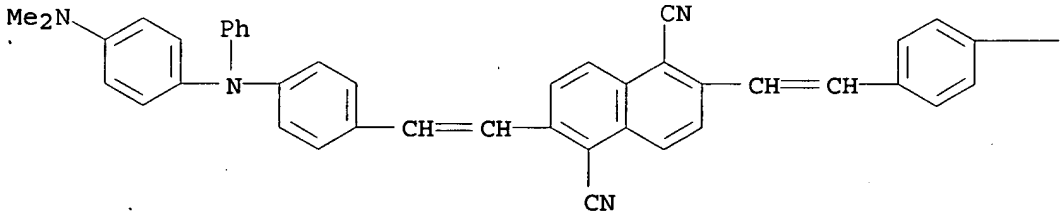


RN 333339-21-2 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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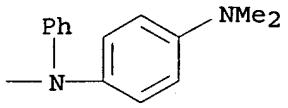
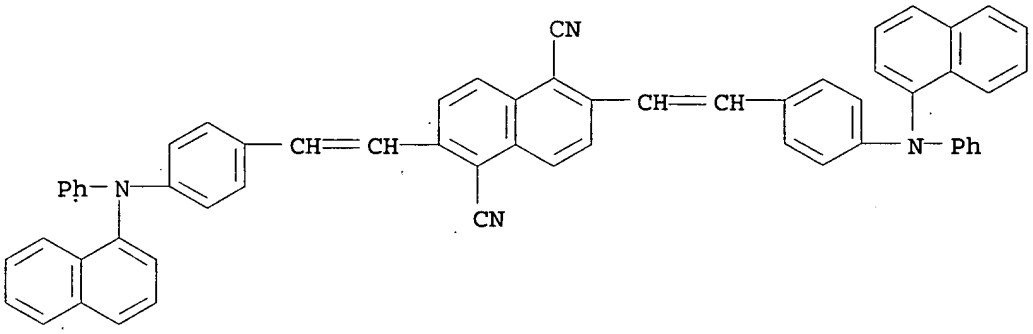
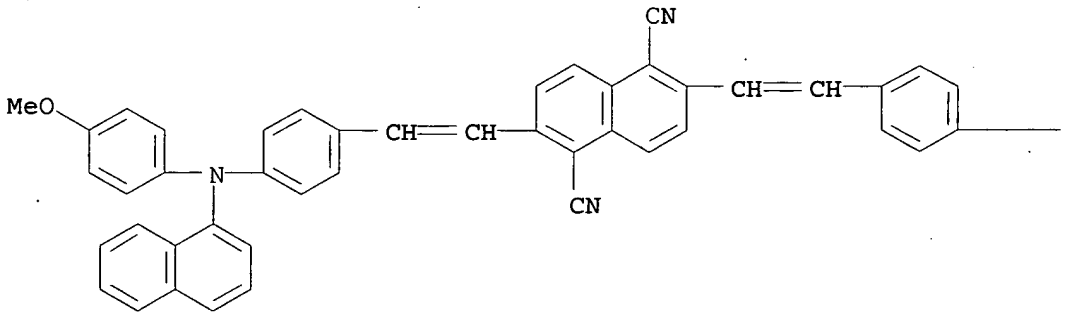


RN 333339-22-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-23-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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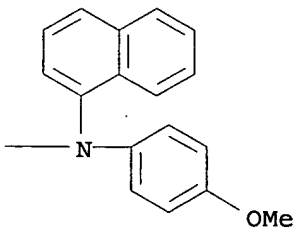
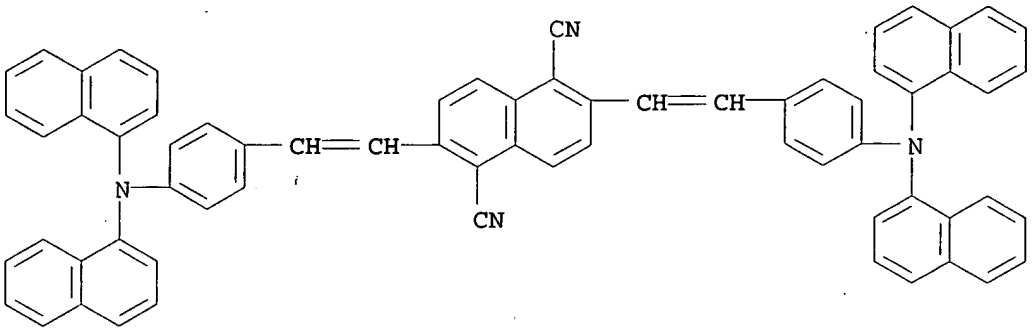


RN 333339-24-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-25-6 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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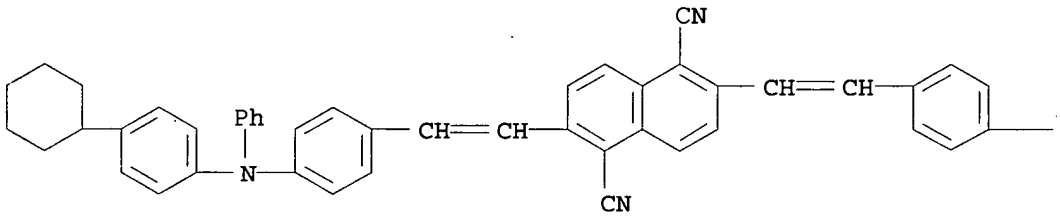

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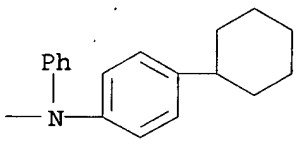

RN 333339-26-7 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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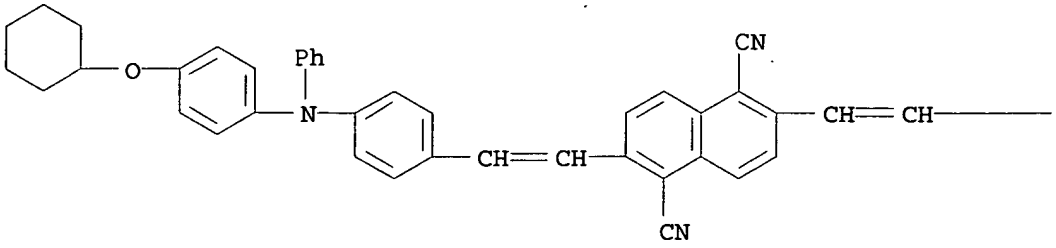

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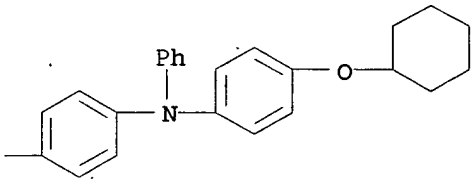
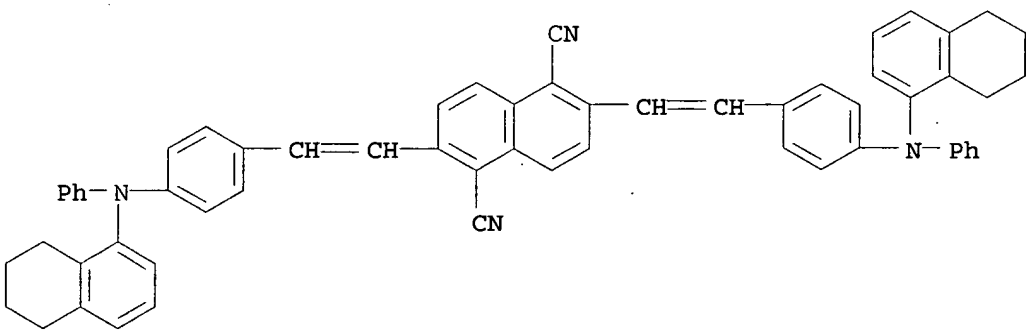


RN 333339-27-8 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-28-9 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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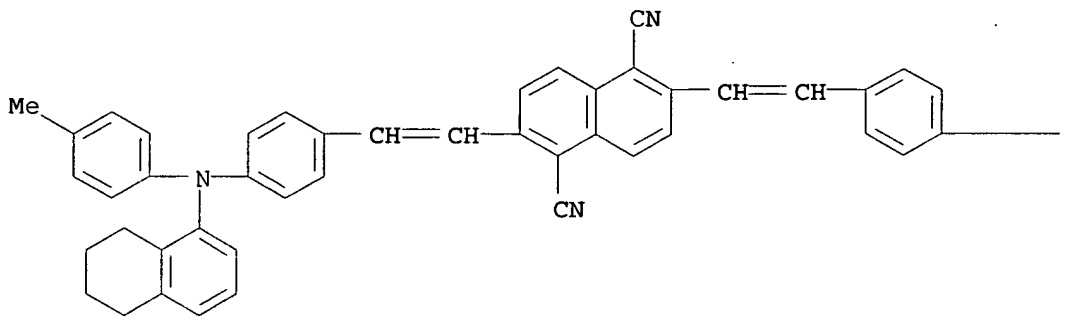

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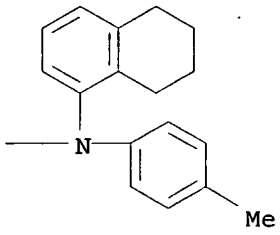

RN 333339-30-3 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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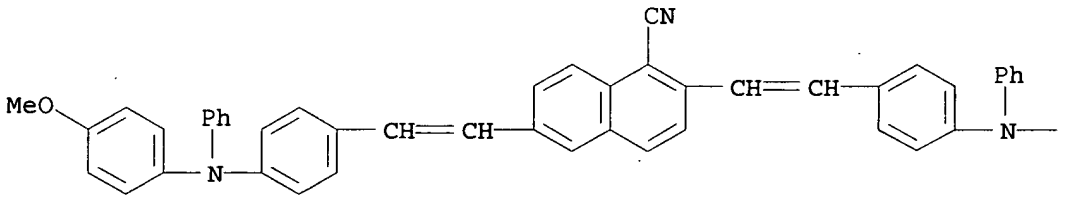

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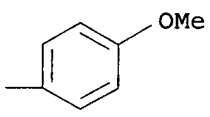

RN 333339-31-4 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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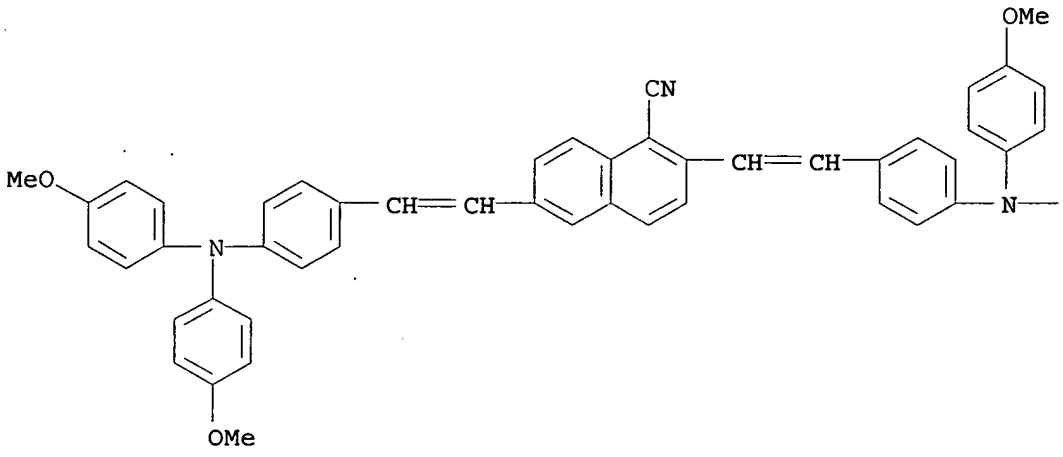

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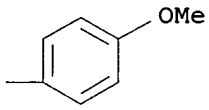
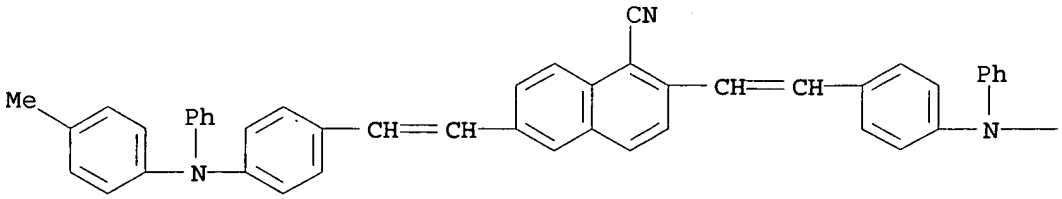


RN 333339-32-5 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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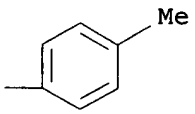

RN 333339-34-7 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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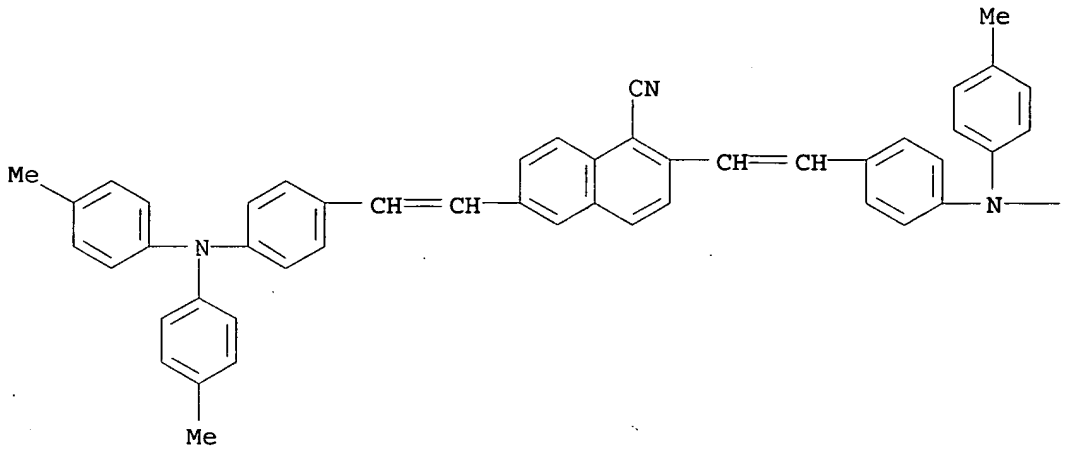

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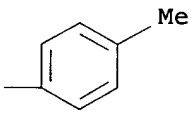

RN 333339-35-8 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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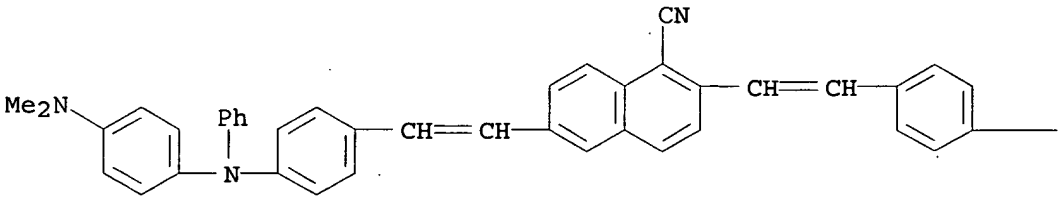

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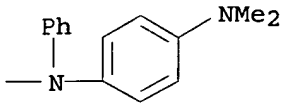
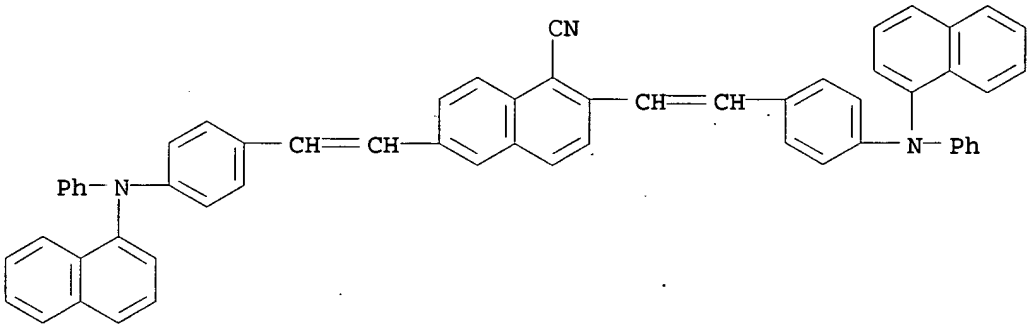


RN 333339-36-9 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-37-0 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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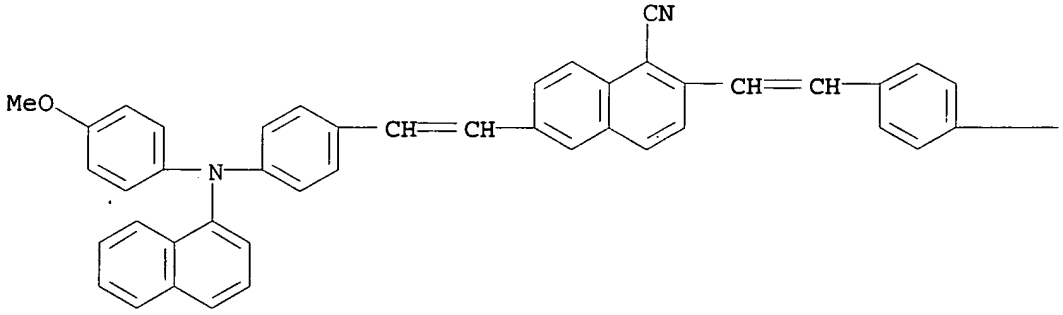

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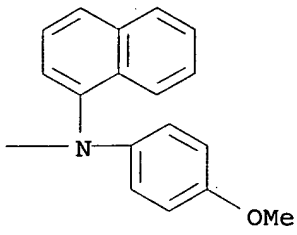
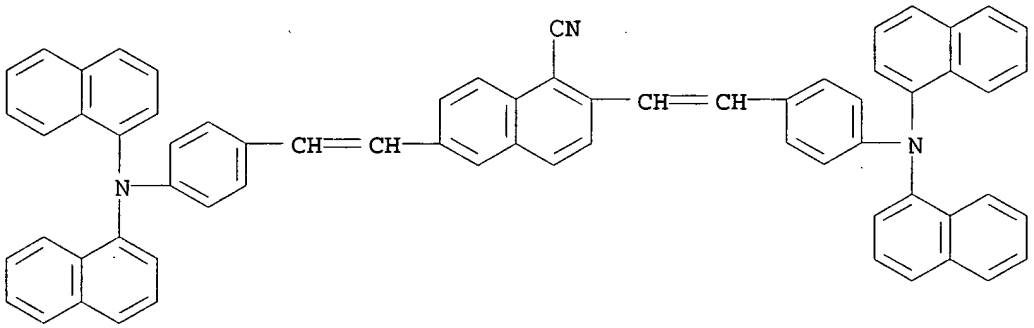


RN 333339-38-1 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-39-2 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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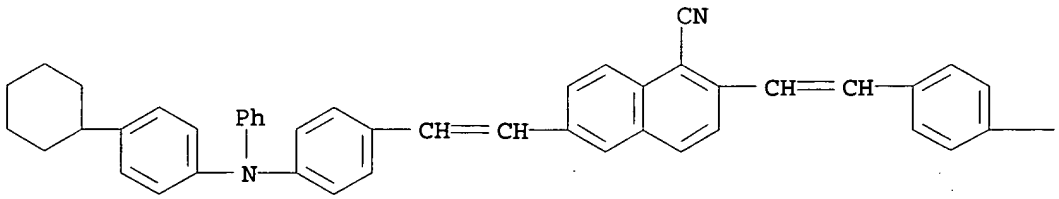

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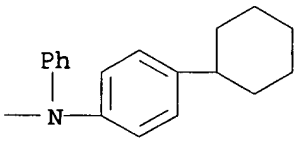

RN 333339-40-5 HCAPLUS

CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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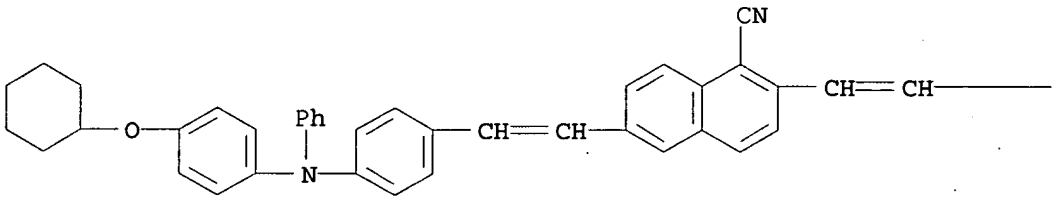

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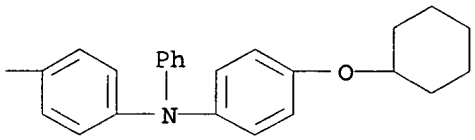
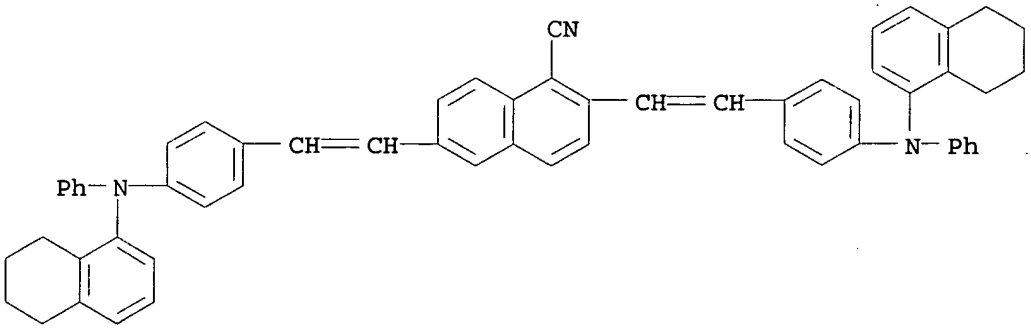


RN 333339-41-6 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-42-7 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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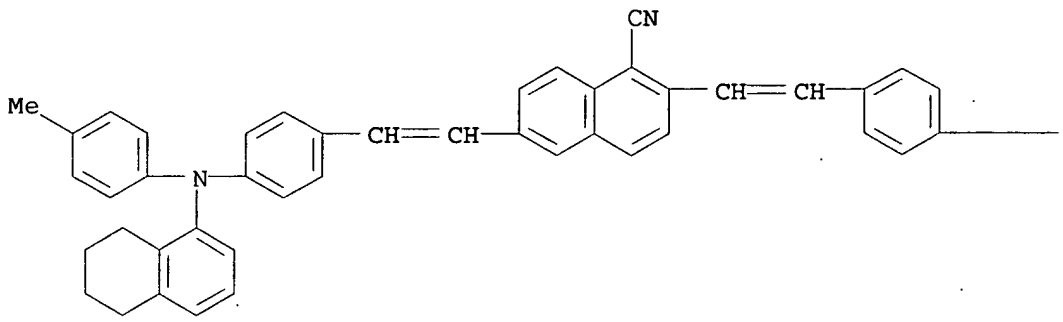

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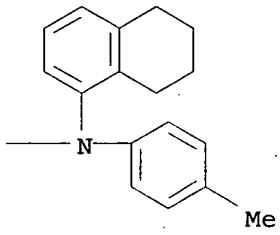

RN 333339-44-9 HCAPLUS
CN Benzenamine, 4,4'-[(1-bromo-2,6-naphthalenediyl)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

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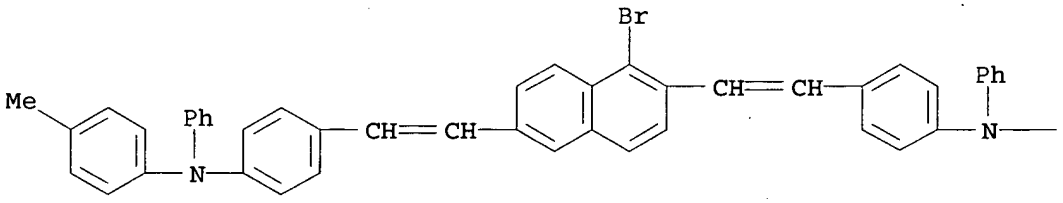

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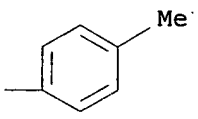
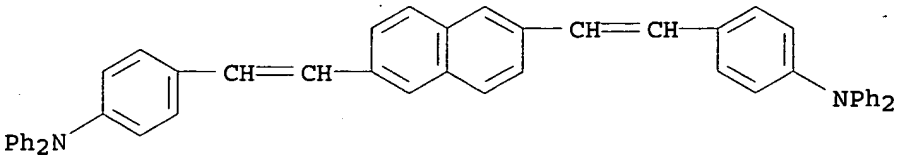


RN 333339-45-0 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N,N-diphenyl- (9CI) (CA INDEX NAME)



RN 333339-46-1 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

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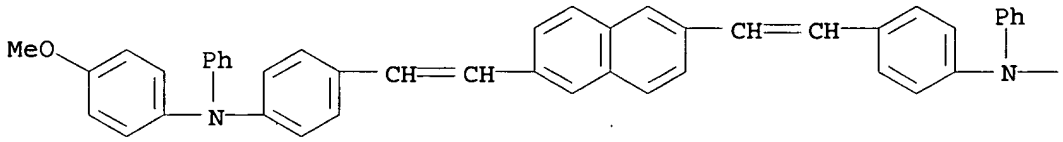

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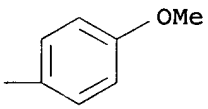

RN 333339-47-2 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

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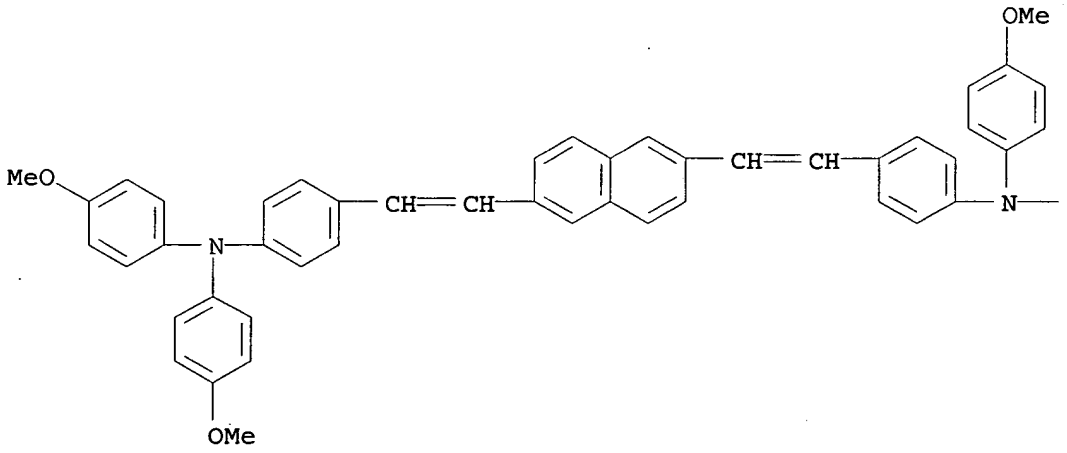

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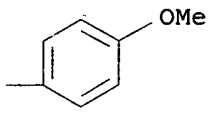

RN 333339-48-3 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

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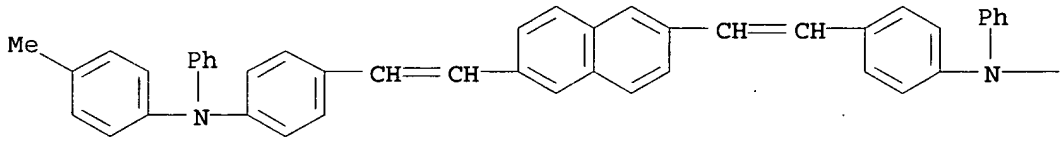

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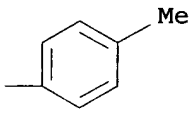

RN 333339-49-4 HCAPLUS
CN 1,4-Benzenediamine, N,N''-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[N',N'-dimethyl-N-phenyl- (9CI) (CA INDEX NAME)

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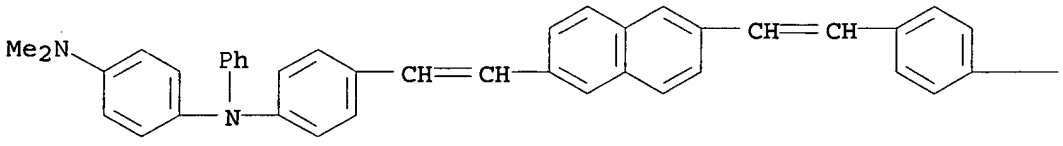

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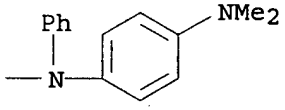
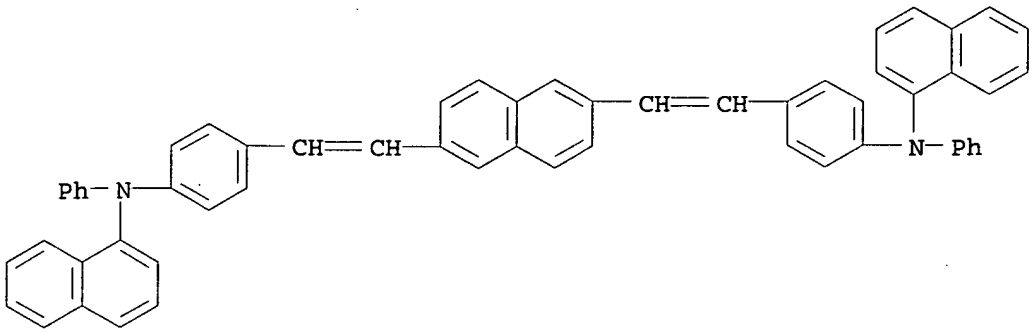


RN 333339-50-7 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[N-phenyl- (9CI) (CA INDEX NAME)



RN 333339-51-8 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[N-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

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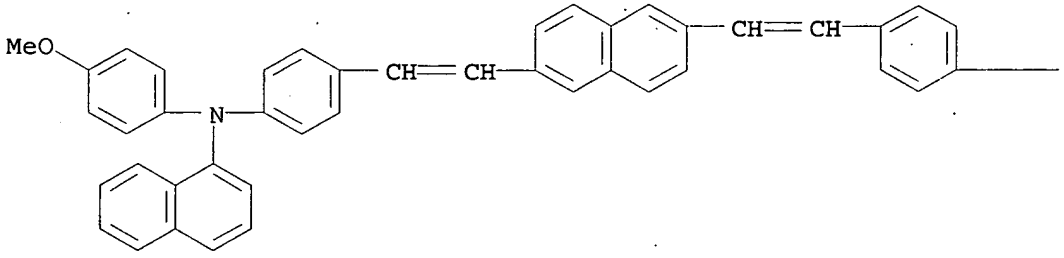

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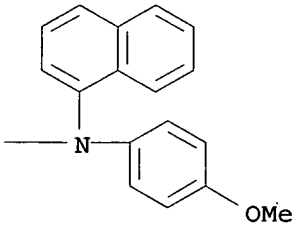
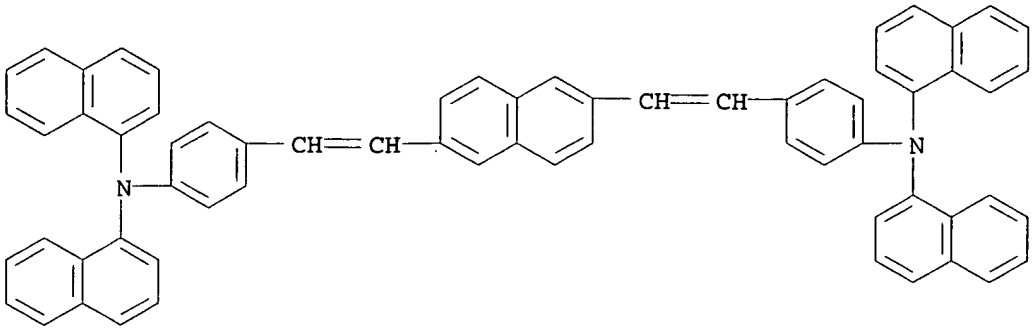
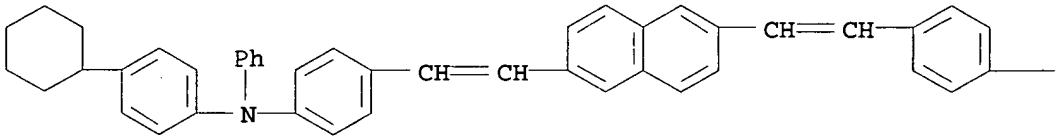


RN 333339-52-9 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[N-1-naphthalenyl- (9CI) (CA INDEX NAME)

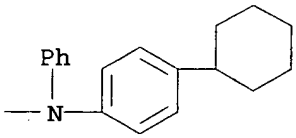


RN 333339-53-0 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-(4-cyclohexylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

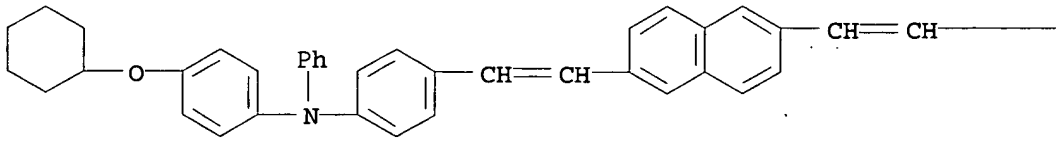


PAGE 1-B

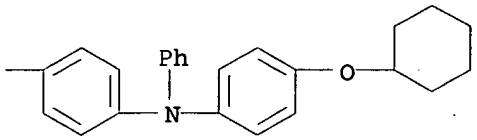


RN 333339-54-1 HCAPLUS
CN Benzenamine, 4,4'-(2,6-naphthalenediyldi-2,1-ethenediyl)bis[N-[4-(cyclohexyloxy)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

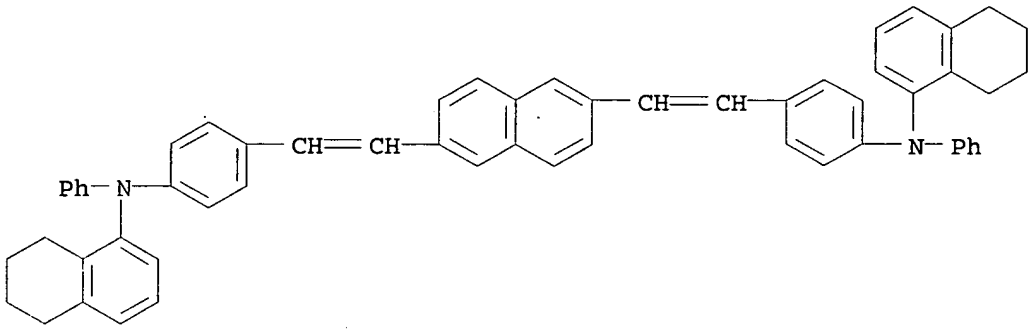
PAGE 1-A



PAGE 1-B

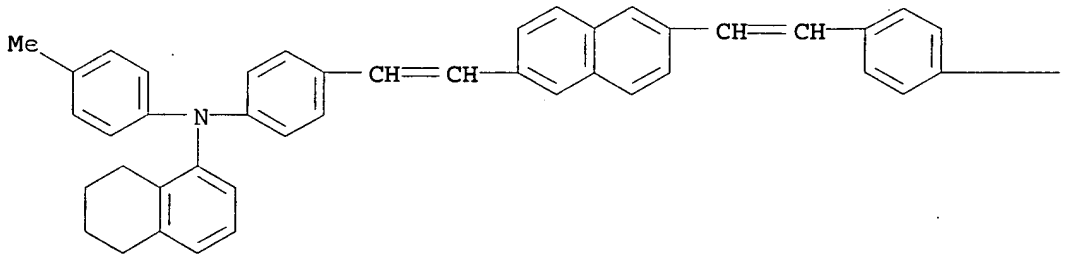


RN 333339-55-2 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[5,6,7,8-tetrahydro-N-phenyl- (9CI) (CA INDEX NAME)

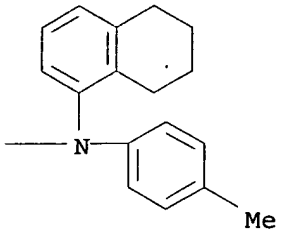


RN 333339-56-3 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[5,6,7,8-tetrahydro-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

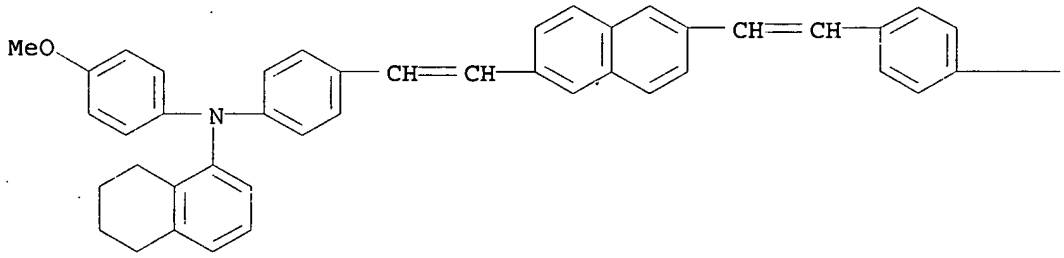


PAGE 1-B

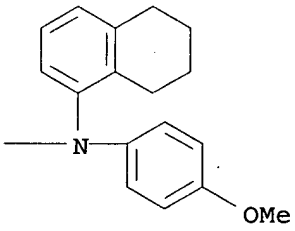


RN 333339-57-4 HCAPLUS
CN 1-Naphthalenamine, N,N'-[2,6-naphthalenediylbis(2,1-ethenediyl-4,1-phenylene)]bis[5,6,7,8-tetrahydro-N-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

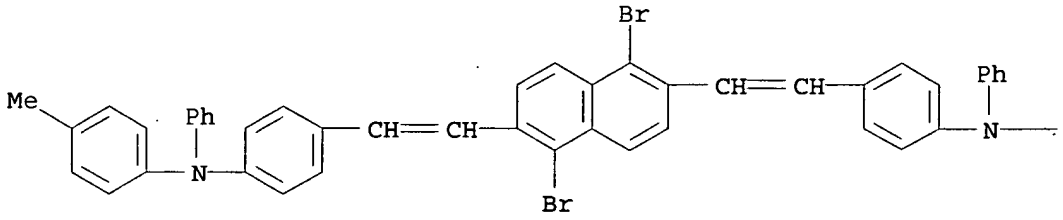


PAGE 1-B

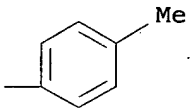


RN 333340-62-8 HCAPLUS
CN Benzenamine, 4,4'-[(1,5-dibromo-2,6-naphthalenediyl)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

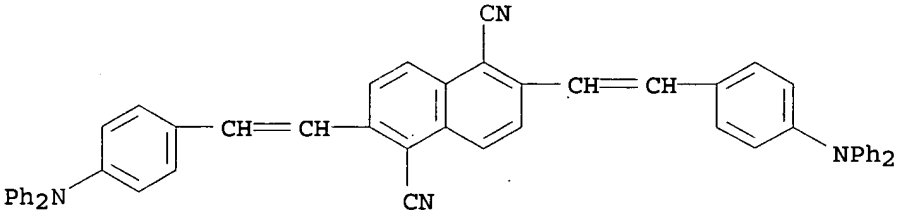
PAGE 1-A



PAGE 1-B

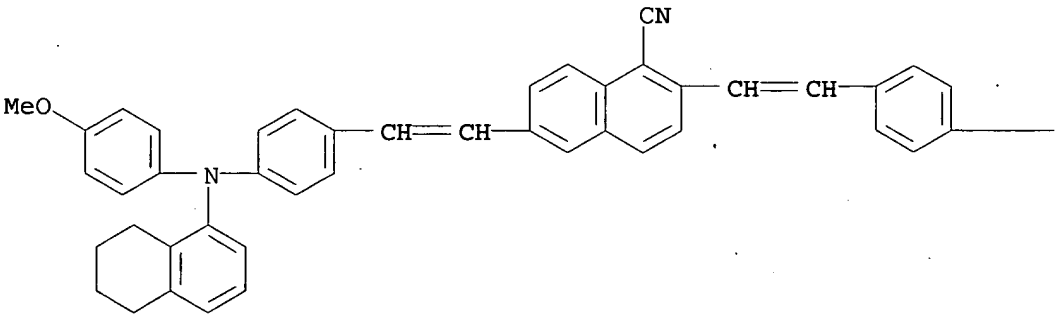


RN 333340-65-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

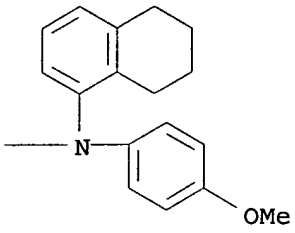


RN 333340-67-3 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C07C211-54
ICS C07C255-58; C07F009-40; C07F009-54; C09K011-06; H05B033-14
CC 25-24 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 74
ST aminostyrylnaphthalene fluorescent prepn **electroluminescent** device; naphthalene bisaminostyryl prepn **electroluminescent** device; Wittig reaction benzaldehyde naphthalene phosphonate
IT **Electroluminescent** devices
Fluorescent substances
(preparation of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)
IT 122-52-1, Triethyl phosphite 36063-00-0 87755-82-6 89115-20-8 288627-01-0
(preparation of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)
IT 333339-13-2P 333339-17-6P
(preparation of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)
IT 62555-81-1P **63804-66-0P 333339-14-3P**
333339-15-4P 333339-16-5P 333339-18-7P
333339-19-8P 333339-20-1P 333339-21-2P
333339-22-3P 333339-23-4P 333339-24-5P
333339-25-6P 333339-26-7P 333339-27-8P
333339-28-9P 333339-29-0P **333339-30-3P**
333339-31-4P 333339-32-5P 333339-34-7P
333339-35-8P 333339-36-9P 333339-37-0P
333339-38-1P 333339-39-2P 333339-40-5P
333339-41-6P 333339-42-7P 333339-43-8P
333339-44-9P 333339-45-0P 333339-46-1P
333339-47-2P 333339-48-3P 333339-49-4P
333339-50-7P 333339-51-8P 333339-52-9P
333339-53-0P 333339-54-1P 333339-55-2P
333339-56-3P 333339-57-4P 333340-62-8P
333340-65-1P 333340-67-3P
(preparation of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

L13 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:457176 HCAPLUS
DOCUMENT NUMBER: 133:81385
TITLE: Organic **electroluminescent** devices
INVENTOR(S): Hosokawa, Chishio; Funehashi, Masakazu; Kawamura, Hisayuki; Arai, Hiromasa; Koga, Hidetoshi; Ikeda, Hidetsugu
PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

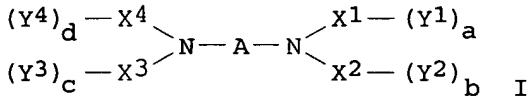
SOURCE: PCT Int. Appl., 167 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000039247	A1	20000706	WO 1999-JP7390	19991228
W: CN, KR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2001052868	A2	20010223	JP 1999-223056	19990805
JP 2001131541	A2	20010515	JP 1999-347848	19991207
EP 1061112	A1	20001220	EP 1999-961465	19991228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6743948	B1	20040601	US 2000-623057	20000825
US 2003072966	A1	20030417	US 2002-179179	20020626
US 2005038296	A1	20050217	US 2004-814121	20040401

PRIORITY APPLN. INFO.:	JP 1998-373921	A 19981228
	JP 1999-140103	A 19990520
	JP 1999-223056	A 19990805
	JP 1999-234652	A 19990820
	JP 1999-347848	A 19991207
	WO 1999-JP7390	W 19991228

US 2000-623057 A3
2000
0825

OTHER SOURCE(S): MARPAT 133:81385
GI



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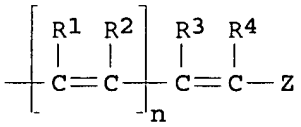


II

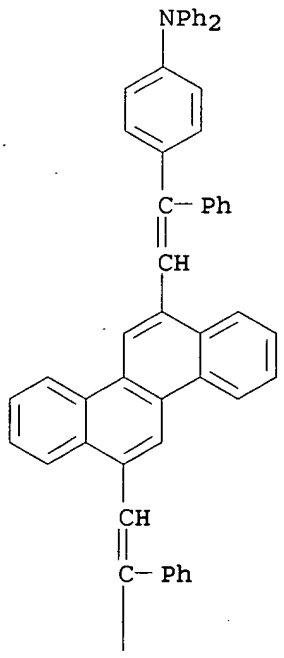
AB The devices having a high **luminescent** efficiency, a long life and a high heat resistance comprise I (A = (substituted) C22-60 arylene; X1-4 = (substituted) C6-30 arylene; Y1-4 = II; a-d = 0-2; R1-4 = H, (substituted) alkyl, (substituted) aryl, cyano; R3 may be bonded to R4 to form a triple bond; Z = (substituted) aryl; n = 0, 1).

IT **279672-41-2**
(organic **electroluminescent** devices)

RN 279672-41-2 HCAPLUS

CN Benzenamine, 4,4'-[6,12-chrysenediylbis(1-phenyl-2,1-ethenediyl)]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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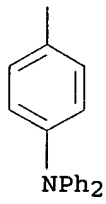


IC ICM C09K011-06
ICS C07C211-54; C07C211-58; C07C209-10; B01J031-24; H05B033-14
CC 73-5 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
ST org luminous long life **electroluminescent** device
IT Thermal resistance
(organic **electroluminescent** devices)
IT Polycarbonates, uses
(organic **electroluminescent** devices)
IT **Electroluminescent** devices
(zg43org. **electroluminescent** devices)
IT 2085-33-8, Tris(8-quinolinolato)aluminum 12789-79-6
50926-11-9, ITO 65181-78-4, TPD 142289-08-5,
4,4'-Bis(2,2-diphenylvinyl)biphenyl 177799-11-0 181367-28-2
186412-15-7 205930-46-7 221453-38-9 226086-76-6
239475-90-2 279671-24-8 279671-53-3 279671-54-4
279671-56-6 279671-57-7 279672-13-8 279672-14-9
279672-15-0 279672-16-1 279672-17-2 279672-18-3
279672-19-4 279672-20-7 279672-21-8 279672-22-9
279672-23-0 279672-24-1 279672-25-2 279672-27-4
279672-30-9 279672-32-1 279672-34-3 279672-35-4
279672-37-6 279672-39-8 **279672-41-2** 279672-42-3
279672-43-4 279672-44-5 279672-45-6 279672-46-7
279672-47-8 279672-48-9 279672-49-0 279672-50-3
279672-51-4 279672-52-5 279672-53-6 279672-54-7
279672-55-8 279672-56-9 279672-57-0 279672-58-1
(organic **electroluminescent** devices)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:418163 HCAPLUS
DOCUMENT NUMBER: 133:65830
TITLE: Red-**emitting** organic **electroluminescent** device
INVENTOR(S): Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

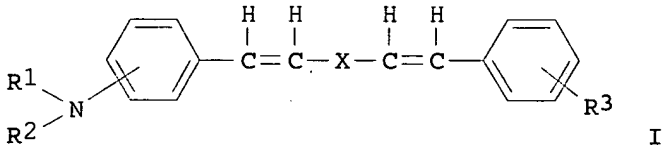
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000173773	A2	20000623	JP 1998-350181	1998 1209
US 6555254	B1	20030429	US 1999-455322	1999 1206
US 2003099863	A1	20030529	US 2002-281583	2002 1028
US 6800382	B2	20041005		

PRIORITY APPLN. INFO.: JP 1998-350181 A 1998 1209

US 1999-455322 A3 1999 1206

OTHER SOURCE(S): MARPAT 133:65830

GI



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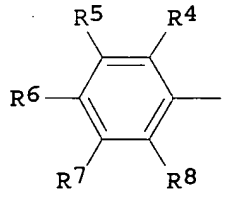


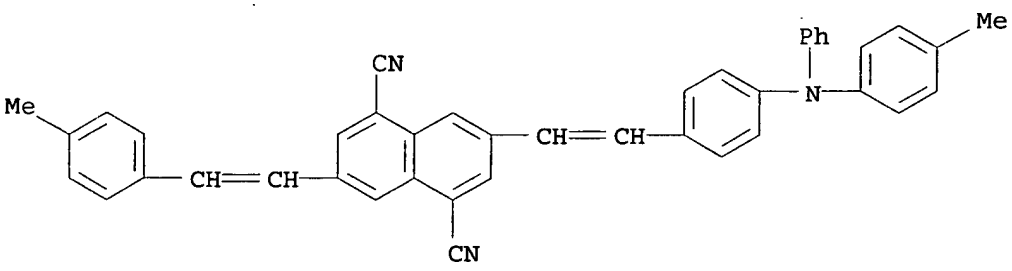
II

AB The invention relates to a red-**emitting** organic **electroluminescent** device, suited for use in making a full color display device, wherein the **electroluminescent** material comprises a distyryl compound represented by I [R1 and R2 = aryl group represented by II [R4-8 = H, alkoxy, alkyl, etc.]; R3 = H, alkoxy, amino, etc.; X = aryl and cyclic hydrocarbon groups].

IT **276683-03-5**
(red-**emitting** organic **electroluminescent** device)

RN 276683-03-5 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 3-[2-(4-methylphenyl)ethenyl]-7-[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
ST distyryl compd red **emitting** org **electroluminescent** device
IT **Electroluminescent** devices
(red-**emitting** organic **electroluminescent** device)
IT **276683-03-5** 276683-04-6
(red-**emitting** organic **electroluminescent** device)

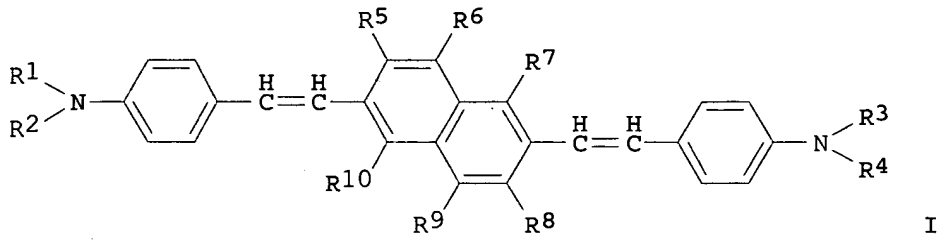
L13 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:32673 HCAPLUS
DOCUMENT NUMBER: 132:85739
TITLE: Organic **electroluminescent** component
INVENTOR(S): Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PATENT ASSIGNEE(S): Sony Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000012226	A2	20000114	JP 1998-180581	1998 0626
JP 3555736	B2	20040818		
US 6265088	B1	20010724	US 1999-339536	1999 0624
EP 967834	A2	19991229	EP 1999-112272	1999 0625
EP 967834	A3	20000112		
EP 967834	B1	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CN 1241892	A	20000119	CN 1999-110984	1999 0625

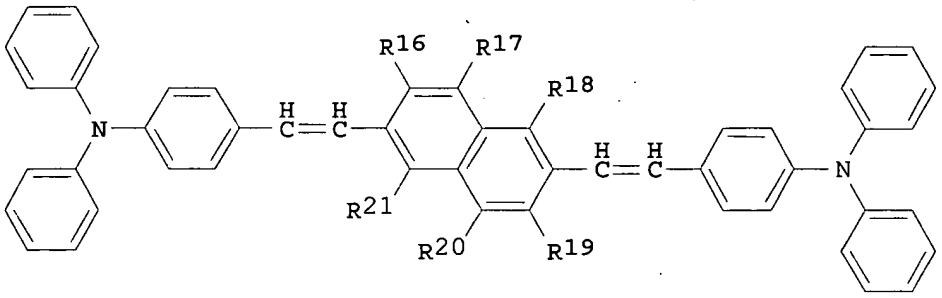
PRIORITY APPLN. INFO.: JP 1998-180581 A

1998
0626

OTHER SOURCE(S): MARPAT 132:85739
GI



I



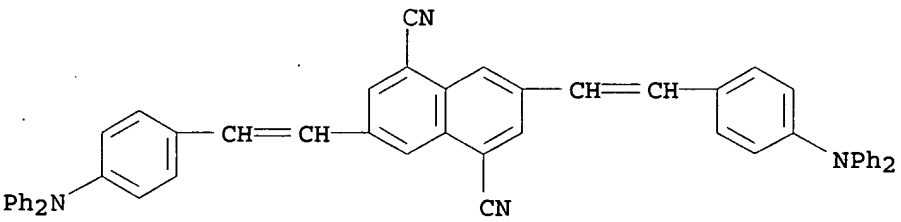
II

AB The invention refers to an organic **electroluminescent** device, suitable for use in flat panel displays such as computer monitors and TV screens, which contains the di-styryl compound I [R1-4 = (un)substituted Ph with and at least one (un)saturated alkoxyl, or alkyl; and R5-10 = H, cyano, nitro or halo], and/or II [R16-21 = H, cyano, nitro, halo] as an **electroluminescent** material for red **luminescence.**

IT **253868-44-9 253868-45-0**
(organic **electroluminescent** component)

RN 253868-44-9 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 3,7-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

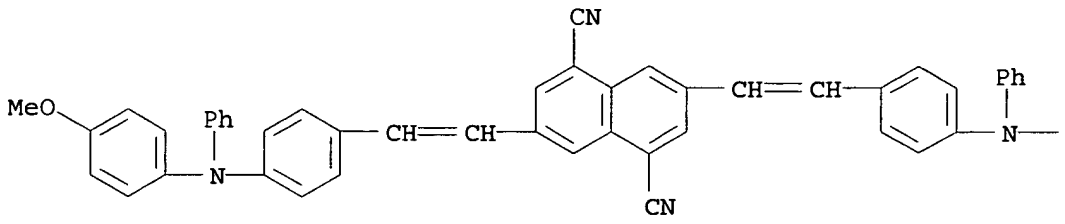


RN 253868-45-0 HCAPLUS

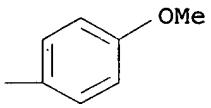
CN 1,5-Naphthalenedicarbonitrile, 3,7-bis[2-[4-[(4-

methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
ST org **electroluminescent** device red **luminescence**
IT **Electroluminescent** devices
Optical imaging devices
(organic **electroluminescent** component)
IT 90-30-2, α-Naphthylphenylamine 2085-33-8, Tris(8-hydroxyquinolinate) aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **253868-44-9 253868-45-0**
(organic **electroluminescent** component)

L13 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:177613 HCAPLUS
DOCUMENT NUMBER: 120:177613
TITLE: Organic **electroluminescent** elements
INVENTOR(S): Hosokawa, Chishio; Sakamoto, Shuji; Kusumoto, Tadashi
PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan
SOURCE: PCT Int. Appl., 118 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9306189	A1	19930401	WO 1992-JP1180	1992 0916

W: US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE

JP 05247458	A2	19930924	JP 1992-50865	1992 0309
JP 3109894	B2	20001120		
JP 05135878	A2	19930601	JP 1992-51955	1992 0310
JP 3109896	B2	20001120		
EP 557534	A1	19930901	EP 1992-919965	1992 0916
R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
US 5389444	A	19950214	US 1993-50489	1993 0511

PRIORITY APPLN. INFO.:	JP 1991-238111	A 1991 0918
	JP 1992-50865	A 1992 0309
	JP 1992-51955	A 1992 0310
	WO 1992-JP1180	W 1992 0916

AB The element comprises a phosphor and/or a hole-transporter material consisting of a polycarbonate having a styrylamine or a diarylvinylenearylene structure as the repeating unit. The element has a high luminance and a long-life stability.

IT **152849-09-7P**
(prepare and use of, as **electroluminescent** phosphors and/or hole transporters)

RN 152849-09-7 HCAPLUS

CN Carbonic acid, polymer with 4,4'-[2,6-naphthalenediylbis[2,1-ethenediyl-4,1-phenylene[(4-methylphenyl)imino]]]bis[phenol] and 4,4'-[1,3-phenylenebis[2,1-ethenediyl-4,1-phenylene(phenylimino)]]bis[phenol] (9CI) (CA INDEX NAME)

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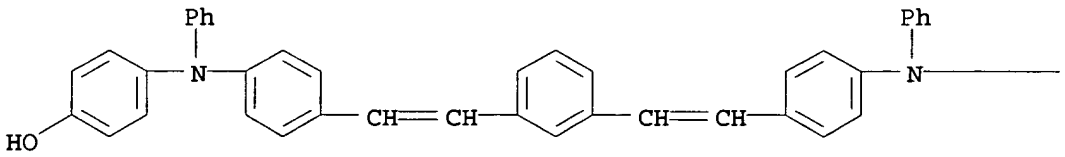
CRN 152849-08-6
CMF C46 H36 N2 O2

PAGE 1-A



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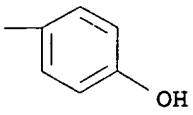
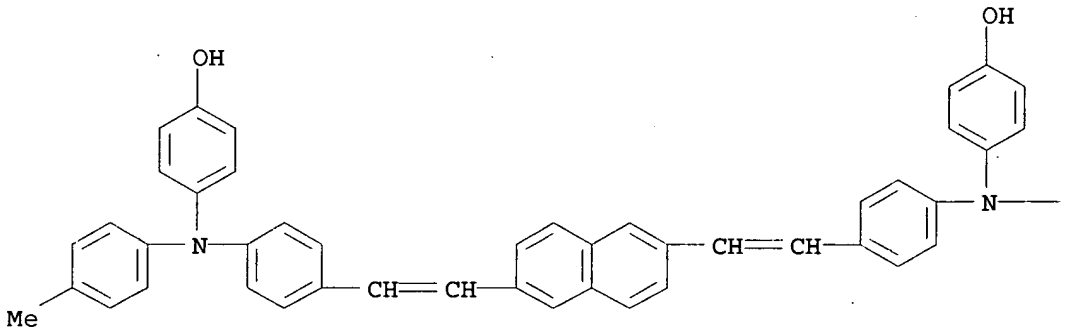


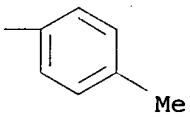
CM 2

CRN 152849-07-5
CMF C52 H42 N2 O2

PAGE 1-A

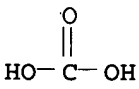


PAGE 1-B



CM 3

CRN 463-79-6
CMF C H2 O3



IC ICM C09K011-06
ICS H05B033-14

CC 73-5 (**Optical**, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
ST **electroluminescent** polycarbonate phosphor hole transporter manuf
IT Polycarbonates, uses
(**electroluminescent** phosphors and hole-transporters from)
IT Phosphors
(polycarbonate, and hole-transporters for **electroluminescent** elements)
IT 146162-90-5P 152848-66-3P 152848-68-5P 152848-70-9P
152848-72-1P 152848-74-3P 152848-77-6P 152848-79-8P
152848-81-2P 152848-83-4P 152848-84-5P 152848-96-9P
152848-97-0P 152848-98-1P 152848-99-2P 152849-00-8P
152849-01-9P 152849-03-1P 152849-04-2P 152849-06-4P
152849-09-7P 152849-10-0P 152849-12-2P 152849-14-4P
152849-15-5P 152849-16-6P 152849-18-8P 152849-19-9P
152849-20-2P 152849-22-4P 152849-24-6P 152849-25-7P
152849-27-9P 152875-42-8P 152875-44-0P 153568-88-8P
(prepare and use of, as **electroluminescent** phosphors and/or hole transporters)

L13 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1982:605776 HCAPLUS
DOCUMENT NUMBER: 97:205776
TITLE: Electrically photosensitive materials and elements for photoelectrophoretic imaging
INVENTOR(S): Isaacson, Henry Verschay; Wright, Beth George; Wright, Hal Eldon
PATENT ASSIGNEE(S): Eastman Kodak Co., USA
SOURCE: Eur. Pat. Appl., 45 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 52513	A2	19820526	EP 1981-305432	1981 1117
EP 52513	A3	19820609		
R: DE, FR, GB				
US 4331751	A	19820525	US 1980-207114	1980 1117
JP 57116376	A2	19820720	JP 1981-183192	1981 1117

PRIORITY APPLN. INFO.: US 1980-207114 A 1980 1117

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

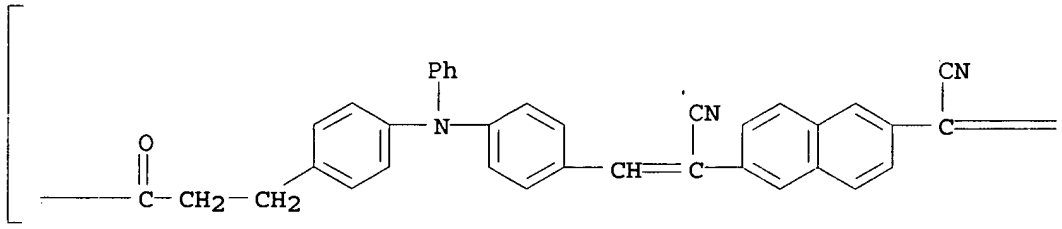
AB Elec. photosensitive compns. for use in photoelectrophoretic imaging process contain an elec. photosensitive polymer of the formula I (R, R3 = C1-18 alkyl or aryl; R1, R2 = H or an electron-withdrawing group; Z = arylene; Z1, Z2 = alkylene or arylene; Z3, Z4 = oxy, imino, thio, carbonyloxy, oxycarbonyl, iminocarbonyl, carbonyldioxy, arylene, carbonyloxycarbonyl, sulfonyl, and the like; a, d = 0 or 1; b, c = 1-25; n ≥ 2). Thus, an elec. sensitive composition was prepared by ball-milling Cyan Blue GTNF in a CH2Cl2 solution of II with 1/8 in. stainless steel balls for 5 days. The pigment to polymer ratio was 1/0.5 by weight The dispersion was then precipitated by pouring into Isopar G, the elec. photosensitive composite particles isolated by centrifuging, and the precipitate then redispersed with lauryl methacrylate-Li methacrylate-methacrylic acid-vinyltoluene copolymer in isopar at a pigment to polymer ratio of 1/0.5 by weight The resulting dispersion showed a relative sensitivity to a red filtered white **light** exposure of 640 for a pos. image and 580 for a neg. image vs. 100 and 100, resp., for a II-free control.

IT **64815-70-9 64844-92-4**
(elec. photosensitive compns. containing, for electrophoretic imaging)

RN 64815-70-9 HCAPLUS

CN Poly[oxy-1,10-decanediyloxy(1-oxo-1,3-propanediyl)-1,4-phenylene(phenylimino)-1,4-phenylene(2-cyano-1,2-ethenediyl)-2,6-naphthalenediyl(1-cyano-1,2-ethenediyl)-1,4-phenylene(phenylimino)-1,4-phenylene(3-oxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)

PAGE 1-A



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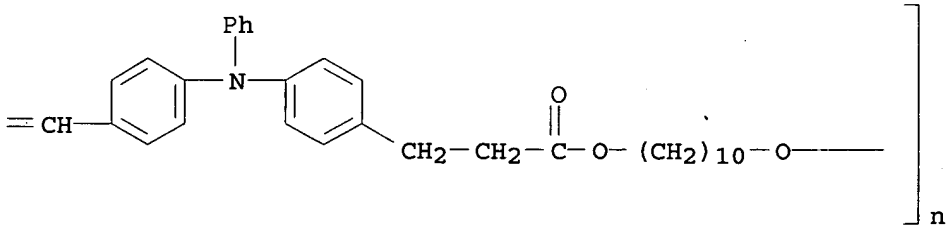


RN 64844-92-4 HCAPLUS

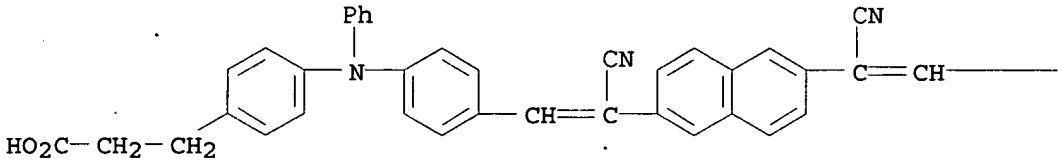
CN Benzenepropanoic acid, 4,4'-[2,6-naphthalenediylbis[(2-cyano-2,1-ethenediyl)-4,1-phenylene(phenylimino)]]bis-, polymer with

1,10-decanediol (9CI) (CA INDEX NAME)

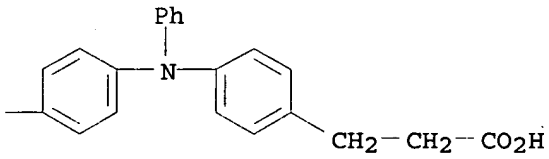
CM 1

CRN 64844-91-3
CMF C58 H44 N4 O4

PAGE 1-A



PAGE 1-B



CM 2

CRN 112-47-0
CMF C10 H22 O2

HO—(CH2)10—OH

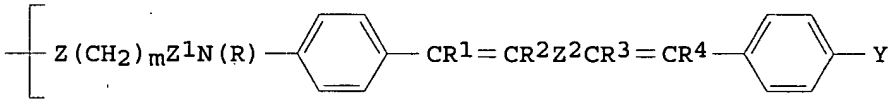
IC G03G017-04
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 64815-66-3 64815-67-4 **64815-70-9** 64815-72-1
64819-21-2 **64844-92-4** 68135-75-1 68135-76-2
83210-98-4 83210-99-5 83211-01-2 83211-02-3 83211-05-6
83211-06-7 83211-07-8 83211-08-9 83211-09-0 83214-97-5
83214-98-6 83251-80-3
(elec. photosensitive compns. containing, for electrophoretic imaging)

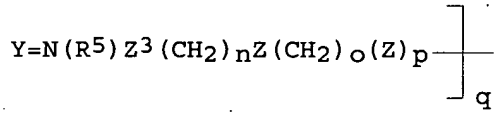
L13 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:14266 HCAPLUS
DOCUMENT NUMBER: 88:14266
TITLE: Novel compounds having utility in photoconductive elements
AUTHOR(S): Wright, Hal Eldon; Berwick, Martin Alfred
CORPORATE SOURCE: UK
SOURCE: Research Disclosure (1977), 158, 23-31 (No. 15827)
CODEN: RSDSBB; ISSN: 0374-4353

DOCUMENT TYPE: Journal; Patent
LANGUAGE: English
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 158027		19770610		

PRIORITY APPLN. INFO.: RD 1977-158027
19770610
GI





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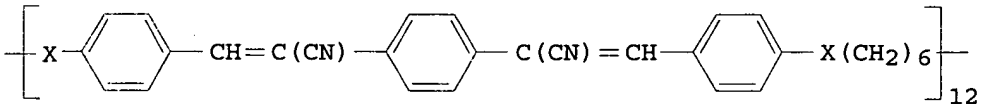
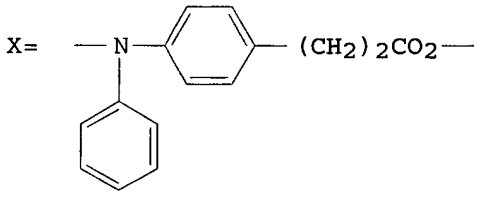




II

AB The polymeric compds. of general formula I (R, R5 = aryl, C1-18 alkyl; R1-4 = H, electron withdrawing group; Z = oxy, imino, thio, oxycarbonyl, iminocarbonyl, carbonyldioxy, ureylene, carbonyloxycarbonyl, sulfonyl, iminosulfonyl, iminocarbonyloxy; Z1, Z3 = arylene, C2-10 alkylene; Z2 = arylene; m, n, o = 1-25; p = 0.1; q ≥ 2) are incorporated into the aggregate photoconductive layers of electrophotog. materials for improved photosensitivity. Thus, an electrophotog. material was prepared by coating a conductive support with a photoconductive layer using a solution comprised of 4-(4-dimethylaminophenyl)-2,6-diphenylthiapyrylium hexafluorophosphate 1.59, a Bisphenol A polycarbonate 3.26, II 0.84, CH2Cl2 171.6, and 1,1,2-trichloroethane 73.5 g and a charge-transport layer using a solution comprised of a Bisphenol A polycarbonate 8.6, Lexan 145 77.8, tri-p-tolylamine 38.2, 1,1-bis(di-p-tolylaminophenyl)cyclohexane 19.4, and CHCl3 1056 g, charged to -500 V, and exposed to 460 nm **light** to give a relative photosensitivity of 4.2 vs. 1.0 for a control using tri-p-tolylamine in the place of II.

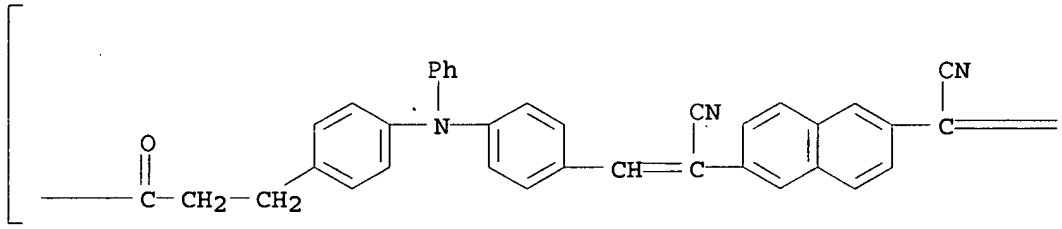
IT **64815-70-9 64815-71-0 64819-23-4 64844-92-4**

(electrophotog. sensitizer, for organic photoconductive compns.)

RN 64815-70-9 HCAPLUS

CN Poly[oxy-1,10-decanediyloxy(1-oxo-1,3-propanediyl)-1,4-phenylene(phenylimino)-1,4-phenylene(2-cyano-1,2-ethenediyl)-2,6-naphthalenediyl(1-cyano-1,2-ethenediyl)-1,4-phenylene(phenylimino)-1,4-phenylene(3-oxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)

PAGE 1-A



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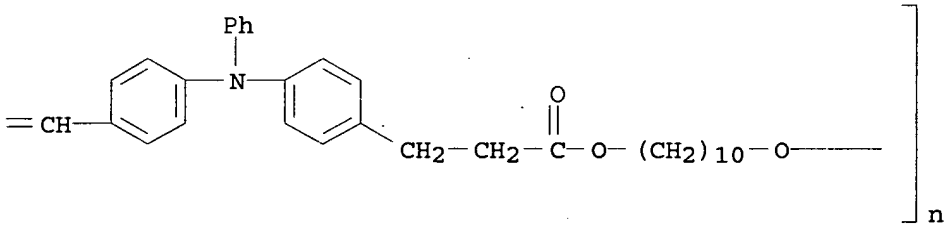
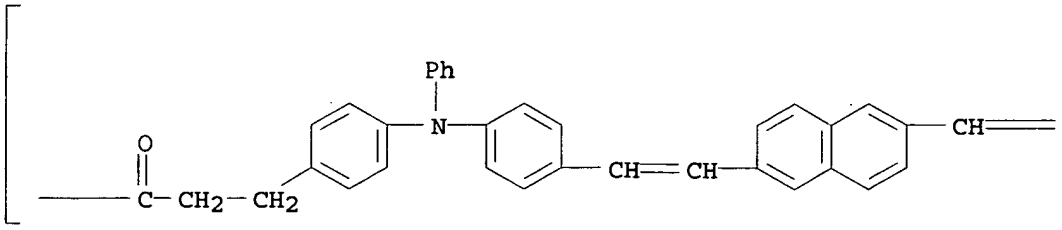


RN 64815-71-0 HCAPLUS

CN Poly[oxy-1,10-decanediyloxy(1-oxo-1,3-propanediyl)-1,4-phenylene(phenylimino)-1,4-phenylene-1,2-ethenediyl-2,6-naphthalenediyl-1,2-ethenediyl-1,4-phenylene(phenylimino)-1,4-phenylene(3-oxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)

PAGE 1-A



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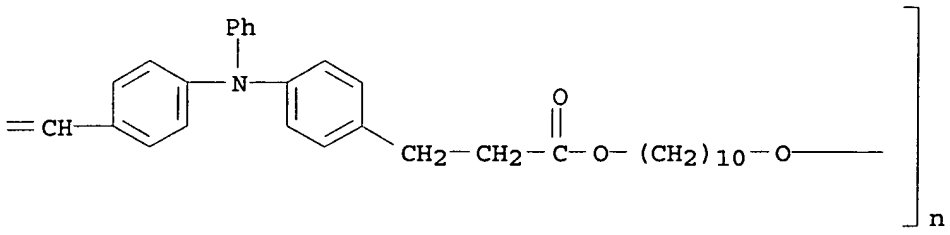

RN 64819-23-4 HCAPLUS
CN Benzenepropanoic acid, 4,4'-[2,6-naphthalenediylbis[2,1-ethenediyl-4,1-phenylene(phenylimino)]]bis-, polymer with 1,10-decanediol (9CI) (CA INDEX NAME)

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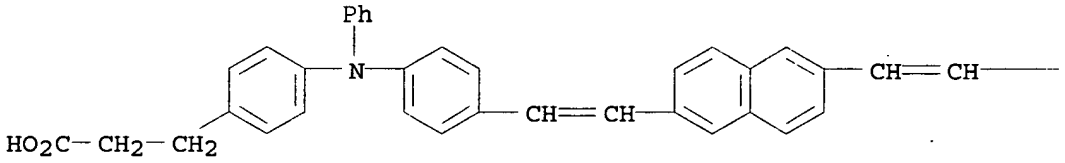
CRN 64819-22-3
CMF C56 H46 N2 O4

PAGE 1-A



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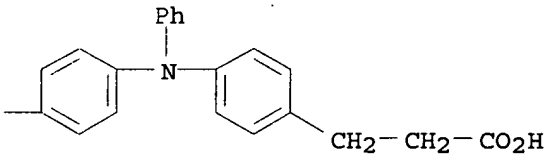

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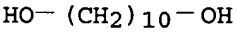
CRN 112-47-0
CMF C10 H22 O2

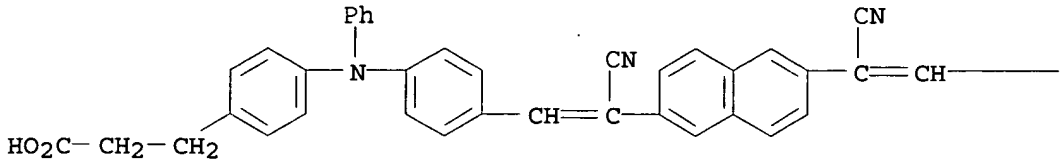


RN 64844-92-4 HCAPLUS
CN Benzenepropanoic acid, 4,4'-[2,6-naphthalenediylbis[(2-cyano-2,1-ethenediyl)-4,1-phenylene(phenylimino)]]bis-, polymer with 1,10-decanediol (9CI) (CA INDEX NAME)

CM 1

CRN 64844-91-3
CMF C58 H44 N4 O4

PAGE 1-A



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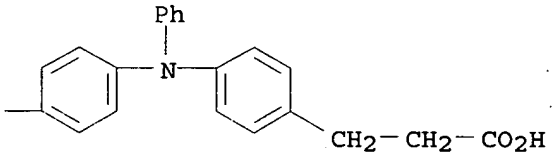

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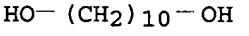

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

IT 64815-66-3 64815-67-4 64815-68-5 64815-69-6
64815-70-9 **64815-71-0** 64815-72-1 64815-73-2
64815-74-3 64819-15-4 64819-17-6 64819-19-8 64819-21-2
64819-23-4 64819-24-5 64819-25-6 64819-26-7
64819-27-8 64844-90-2 **64844-92-4** 64853-21-0
64853-22-1 64853-23-2 65294-99-7
(electrophotog. sensitizer, for organic photoconductive compns.)